

NOAA TECHNICAL MEMORANDUM NWS NHC 42

ANNUAL DATA AND VERIFICATION TABULATION  
ATLANTIC TROPICAL CYCLONES 1988

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## INTRODUCTION

This is the Fifteenth report of an annual series prepared by the National Hurricane Center (NHC) to provide a source of summarized data on Atlantic tropical cyclones. It will not duplicate the narrative overview of the hurricane season or the description of individual storms, which will continue to be published in the Monthly Weather Review. In addition to data supplied by the National Weather Service, materials have been furnished by the NOAA Tropical Satellite and Analysis Center of NHC, and the CARCAH (Chief Aerial Reconnaissance Coordination, all Hurricanes). This report also includes Probability Forecasts issued with advisories on landfalling United States tropical storms and hurricanes (Table 9).

## OBJECTIVE FORECAST TECHNIQUES

The following tropical cyclone prediction models were used at the National Hurricane Center for forecasting motion on an operational basis:

1. SANBAR (Sanders and Burpee, 1968). A filtered barotropic model using input data derived from the 1000 to 100 mb pressure weighted winds. The model requires use of "bogus" data in data-void areas. The system was modified by Pike (1972) so that the initial wind field near the storm would conform to the current storm motion.
2. HURRAN (Hope and Neumann, 1970). An analog system using as a data base the tracks of all Atlantic tropical storms and hurricanes dating back to 1886.
3. CLIPER (Neumann, 1972). Stepwise multiple screening regression using the predictors derived from climatology and persistence.
4. NMC QLM MODEL (Mathur 1988). Beginning with the 1988 hurricane season, the quasi-Lagrangian model (QLM) replaced the NMC's operational hurricane prediction model. The MFM was developed in the early 1970's, well before NMC acquired the Cyber 205 computer. This advanced computer allowed higher resolution computational grids and more sophisticated procedures for parameterizing sub-grid scale physical processes to be used operationally. A new operational hurricane model was developed (i.e., the QLM) based largely on the model described by Mathur. The QLM is flexible; it can be integrated with any reasonable horizontal and vertical resolution over any limited area domain. Further, its easy to incorporate new physical parameterization procedures into the model.



5. NHC-83 MODEL (Neumann, 1983). NHC-83 is a Statistical-Dynamical model. That is, it uses the output from a numerical model but in a statistical prediction framework. Some features of the NHC-83 model are: "perfect prog" through 84 hours, deep-layer-mean height fields, avoidance of predictors in deep tropics, graphical output and forecasts available to meet advisory deadlines.
6. BAM is the Beta and Advection Model and is a modification of the Pocket Hurricane Model (Holland, 1983). Tropical cyclone motion is determined by the application of a barotropic vorticity equation on a beta plane to large-scale flow fields taken from NMC analyses and primitive equation model forecasts.

In addition, operational forecasts of tropical cyclone intensity changes in knots at 12-hourly intervals out to 72 hours are generated by a program named SHIFOR (Statistical Hurricane Intensity Forecasts). Generation of the forecast equations was done by multiple screening regression technique using historical tropical cyclone data as input. Results over the past several years have shown that SHIFOR and official intensity forecasts have comparable skill scores.

The National Hurricane Center uses the above models as guidance in the formulation of its forecasts. The hurricane forecaster also makes extensive use of analysis and prognoses produced by NMC and TSAC (Tropical Satellite and Analysis Center) in Miami.

#### VERIFICATION

Verification statistics for the 1988 season are shown in Table 1. The initial position error in Table 1 is the difference between the operational initial position and that determined during post analysis (best track position). The forecast displacement error is the vector difference between the forecast displacement and the actual displacement computed from the best-track positions. Landfall prediction errors for the official forecasts are given in Table 2a and 2b. These are defined as the distance from the predicted landfall point, made 24 hours prior to actual landfall, to the actual landfall point. In cases where a storm either crossed an island or made landfall when predicted to remain offshore, the error was designated from the landfall point to the nearest point on the forecast track.

Tropical cyclone warning lead times for the United States landfalling storms are given in Table 3a. A summary of the warning lead times 1970-1988 for hurricanes only and for both tropical storms and hurricanes is given in Table 3b. The length of time between the issuance of the warnings and the time that the center crossed the coast, as determined from the "best track", was taken as the warning lead time. A more complete discussion of the verification of tropical cyclone warning lead times can be found in the 1977 Annual Data and Verification Tabulation (Lawrence, Herbert and Staff, 1979).

## DATA SUMMARIES

A summary of the 1988 North Atlantic tropical cyclone statistics is given in Table 4. Tracks of the 1988 storms and hurricanes are shown in figure 1.

The best track, initial, and forecast positions for the 1988 systems are in Table 5, along with initial position and forecast errors, and average errors.

Table 6 lists all center fix positions and intensity evaluations used operationally at the National Hurricane Center during the 1988 season. Fixes are in chronological order, and include those obtained by aerial reconnaissance penetrations, satellite (Miami TSAC), and land-based radar. The legend precedes the initial table.

Supplementary Vortex Data Messages are given in Table 7. A diagram of the paths flown in obtaining these Data Messages is given in Figure 2. The symbolic code for interpreting the Data Messages is given in Appendix A.

Table 8 is an aerial reconnaissance summary for the 1988 season.

Graphs of the lowest central pressure versus time for the 1988 named tropical cyclones are shown in Figure 4.

Table 9 gives the probability forecasts issued for the 1988 land-falling United States storms and hurricanes.

## ACKNOWLEDGEMENTS

Main contributors were Miles Lawrence, who computed the verification statistics and Joan David, who drafted the track chart and pressure/time graphs. Brian Maher assisted in preparing the satellite pictures and Brian Petrovich the Supplementary Vortex Data Messages.

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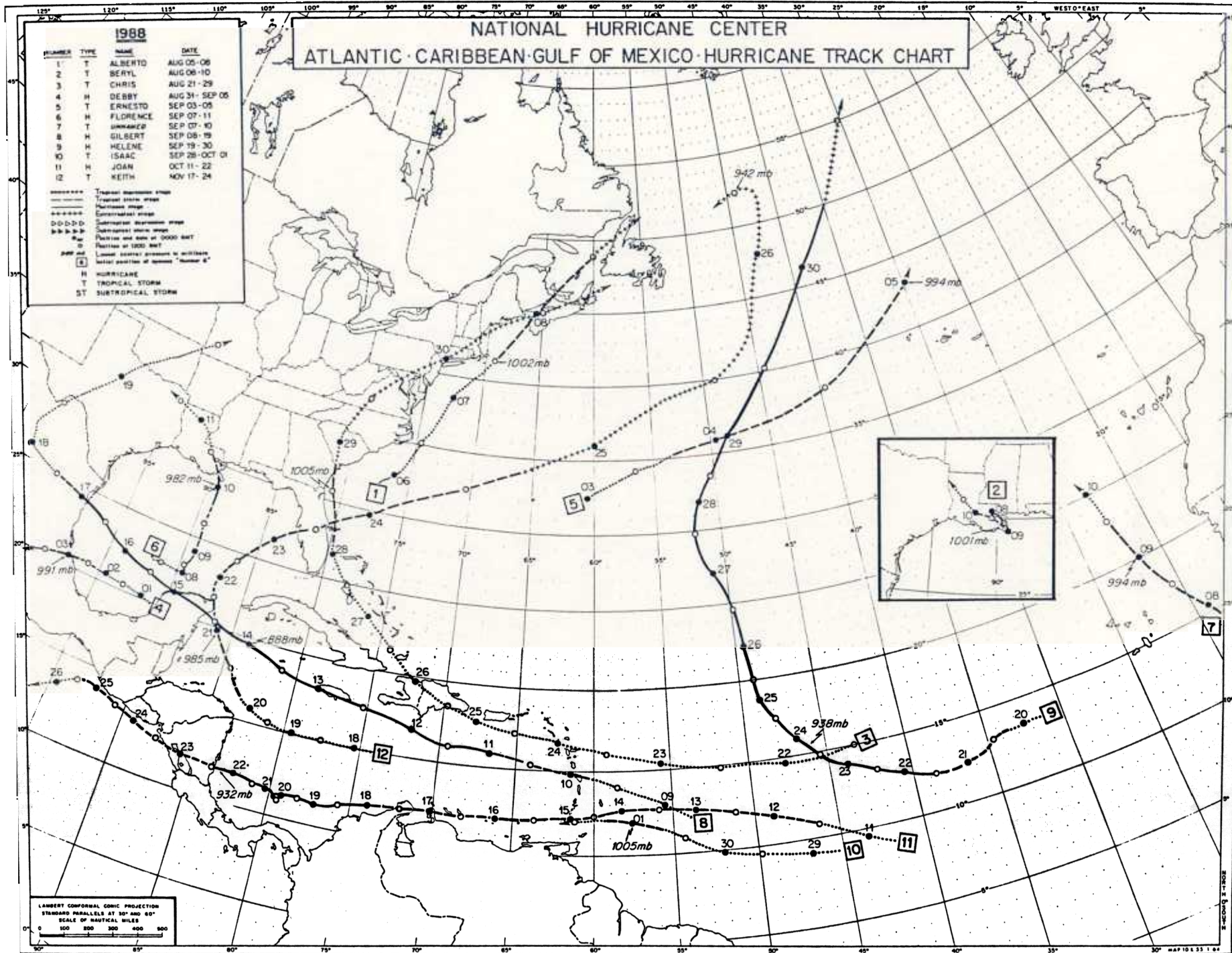


Fig. 1. Tracks of 1988 tropical cyclones.

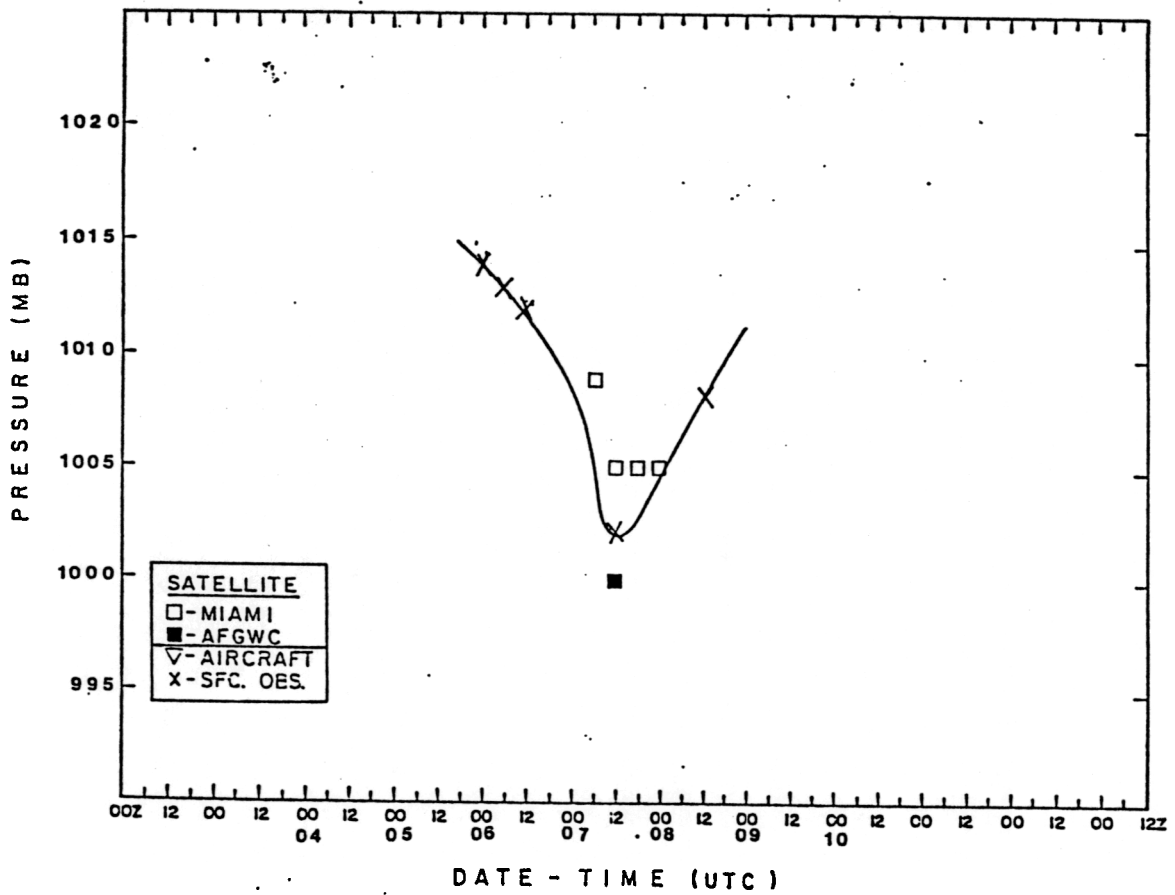


Fig. 2 Best track minimum central pressure curve for Tropical Storm Alberto, 5-8 August, 1988.

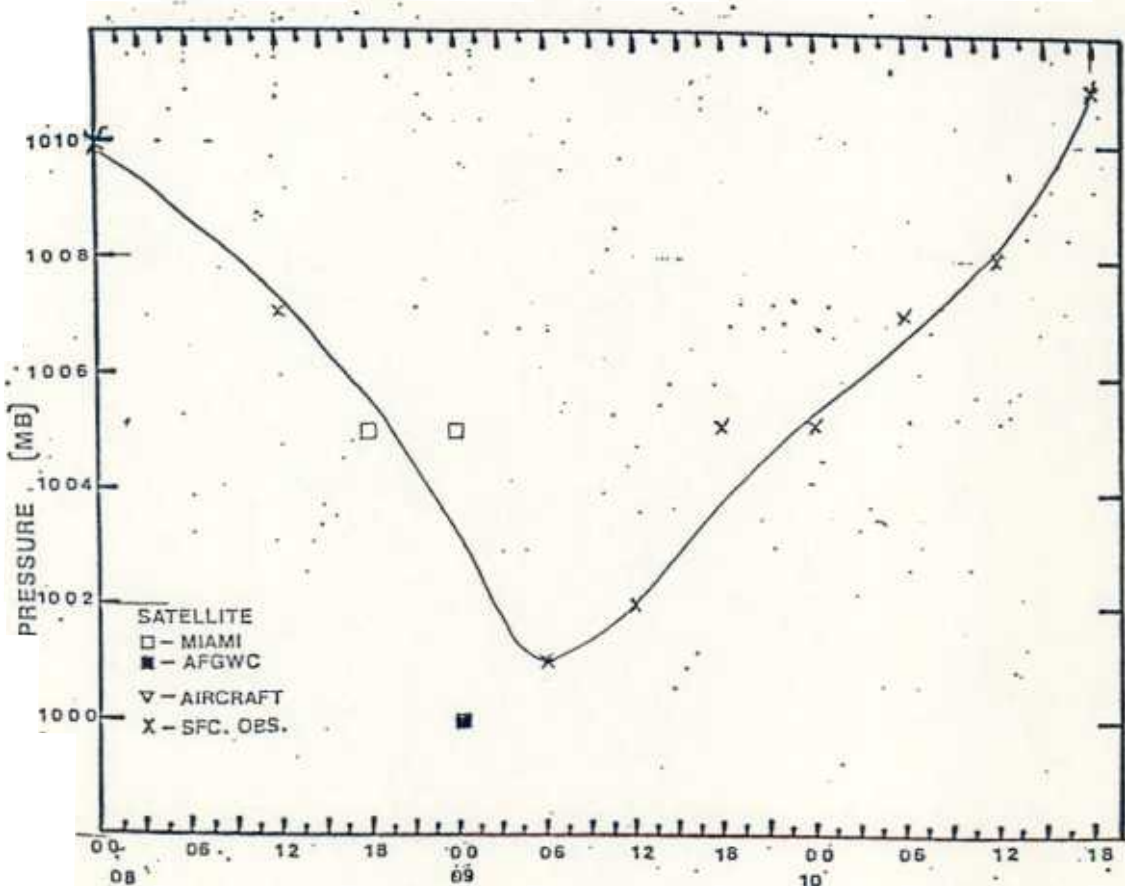


Fig. 3 Best track minimum central pressure curve for Tropical Storm Beryl, 8-10 August, 1988.



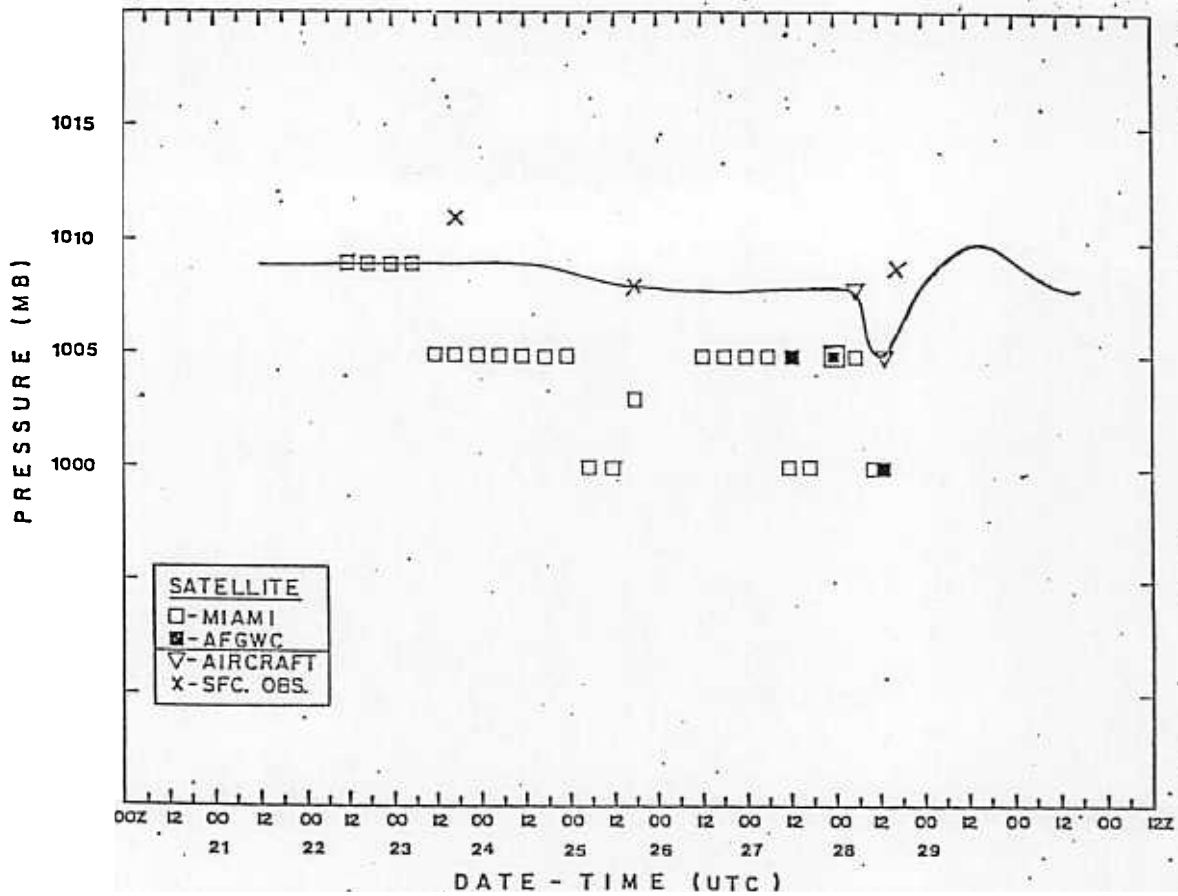


Fig. 2 Best track minimum central pressure curve for Tropical Storm Chris 21-29 August, 1988.

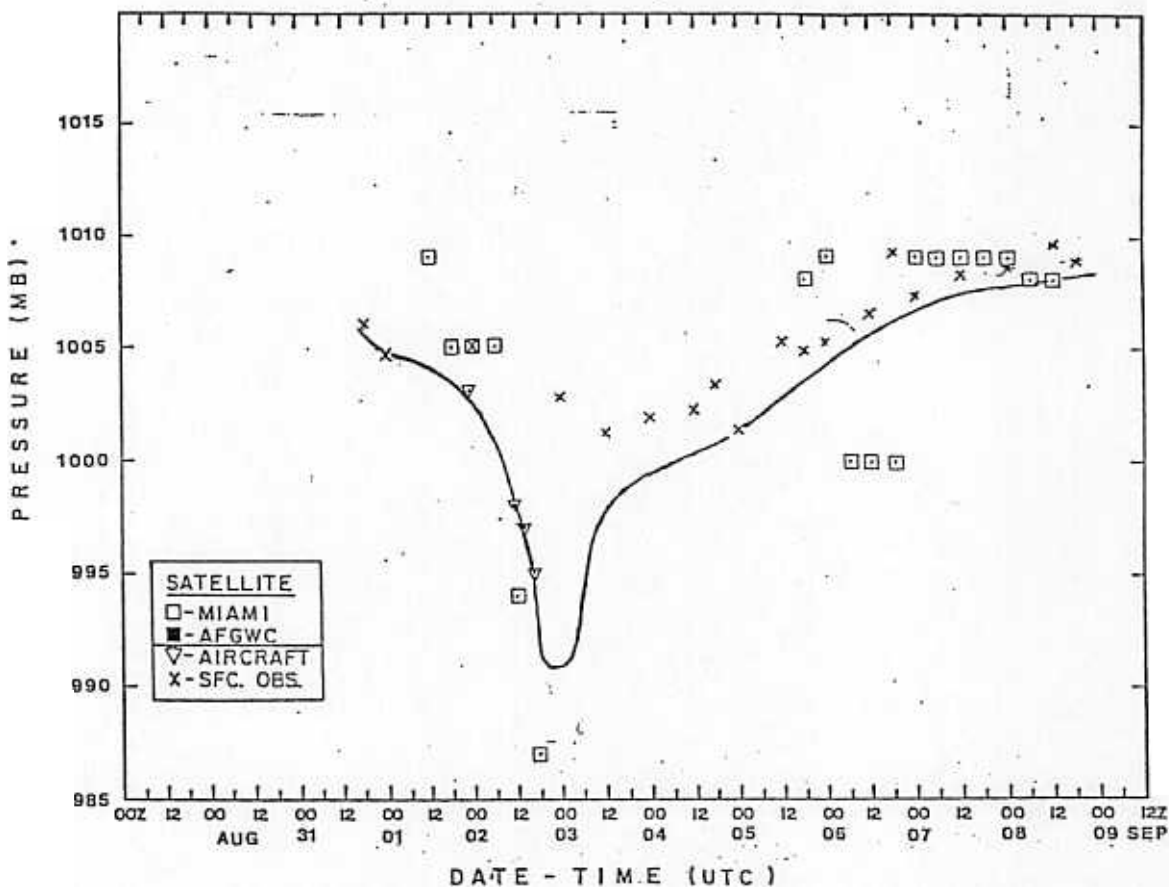


Fig. 2 Best track minimum central pressure curve for Hurricane Debby, 31 August-8 September, 1988.

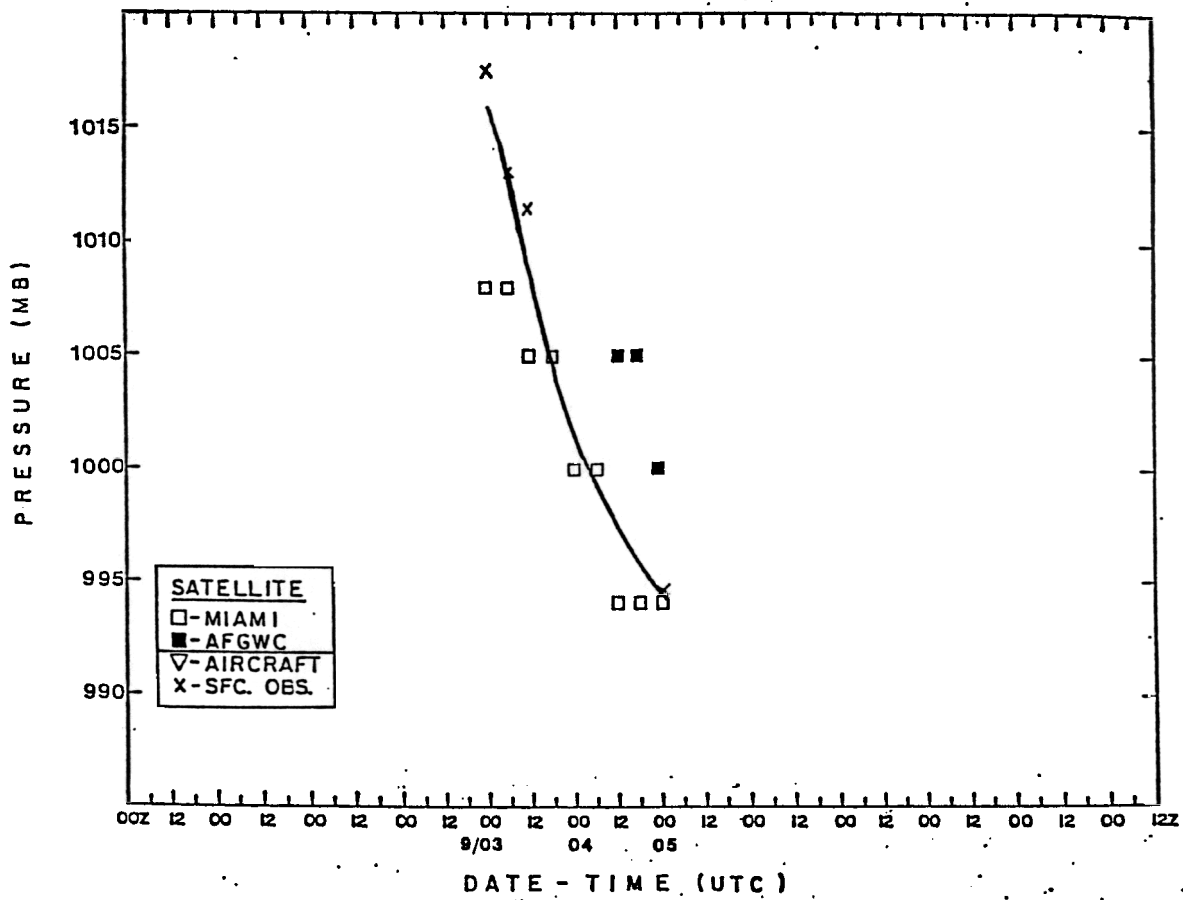


Fig. 2

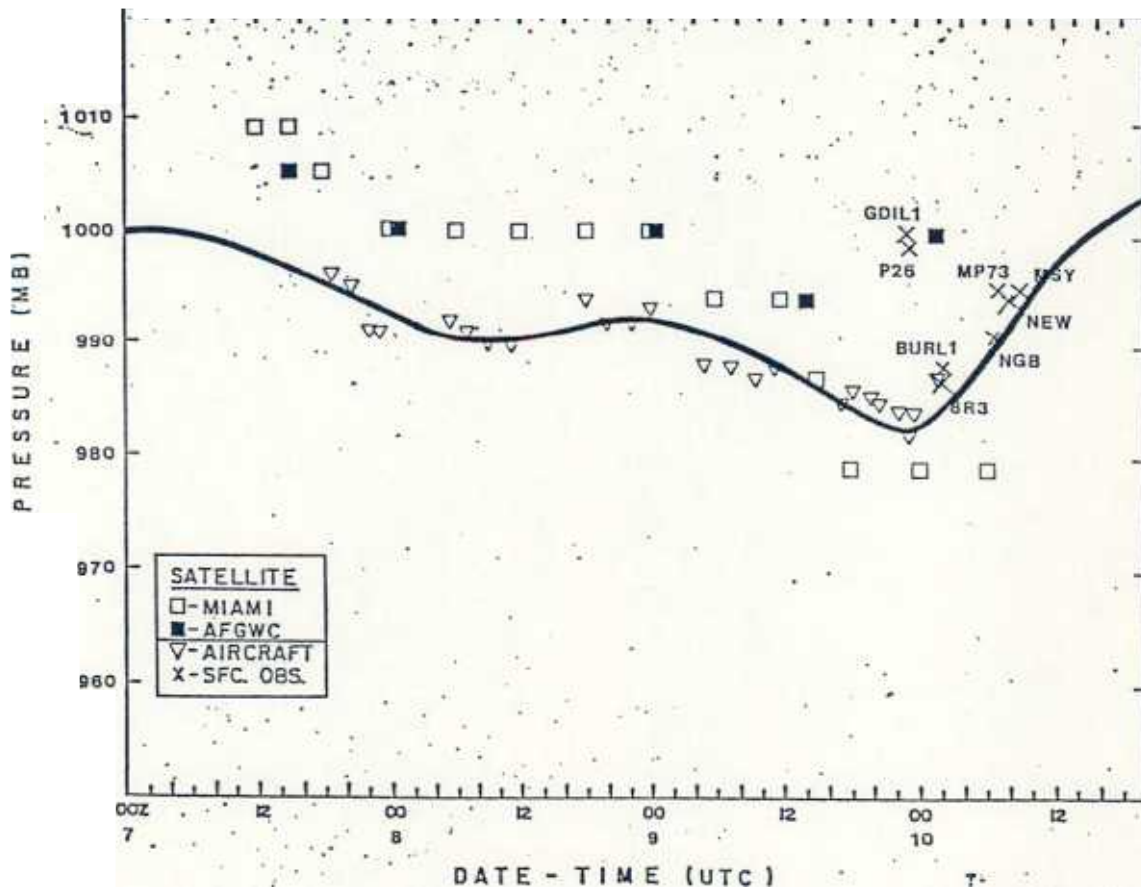


Fig. 2 Best track minimum central pressure curve for Hurricane Florence, 7-11 September, 1988.



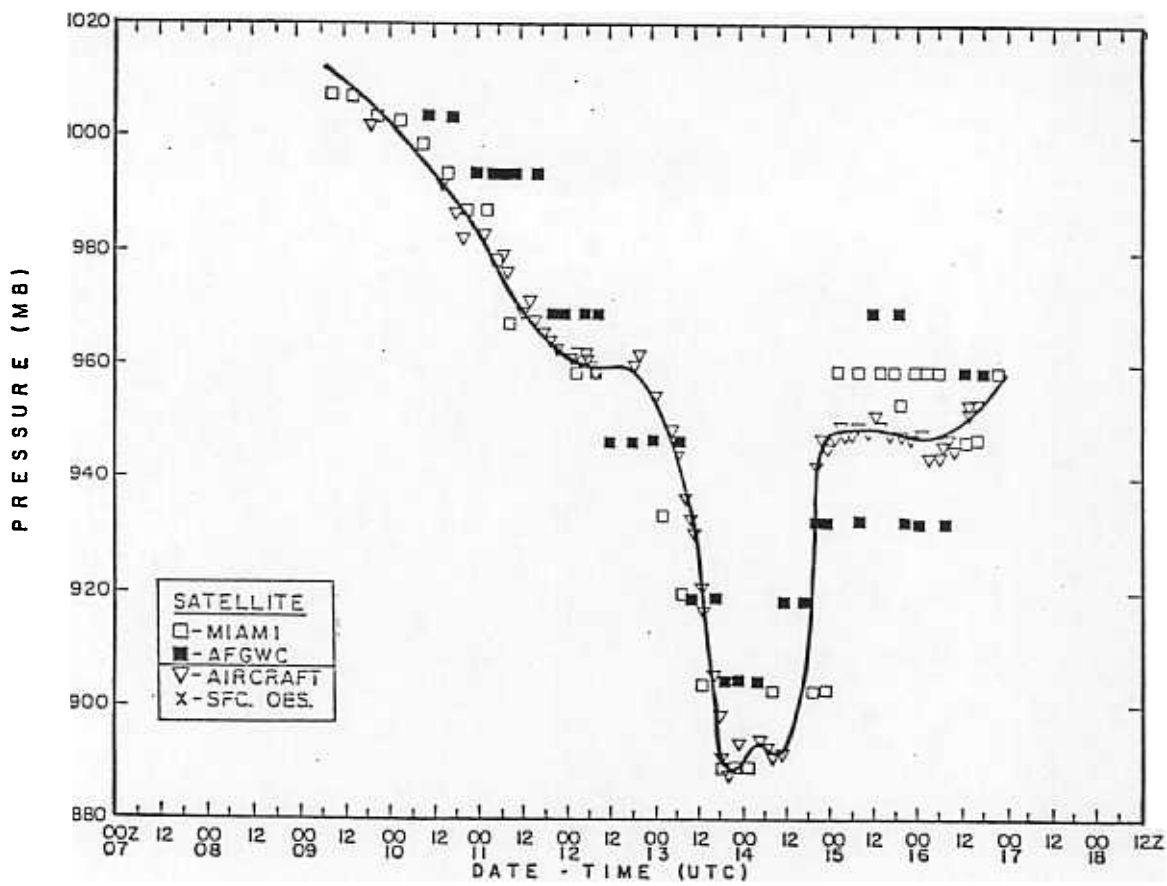


Fig. 1... Best track minimum central pressure curve for Hurricane Gilbert, 8-19 September, 1988.

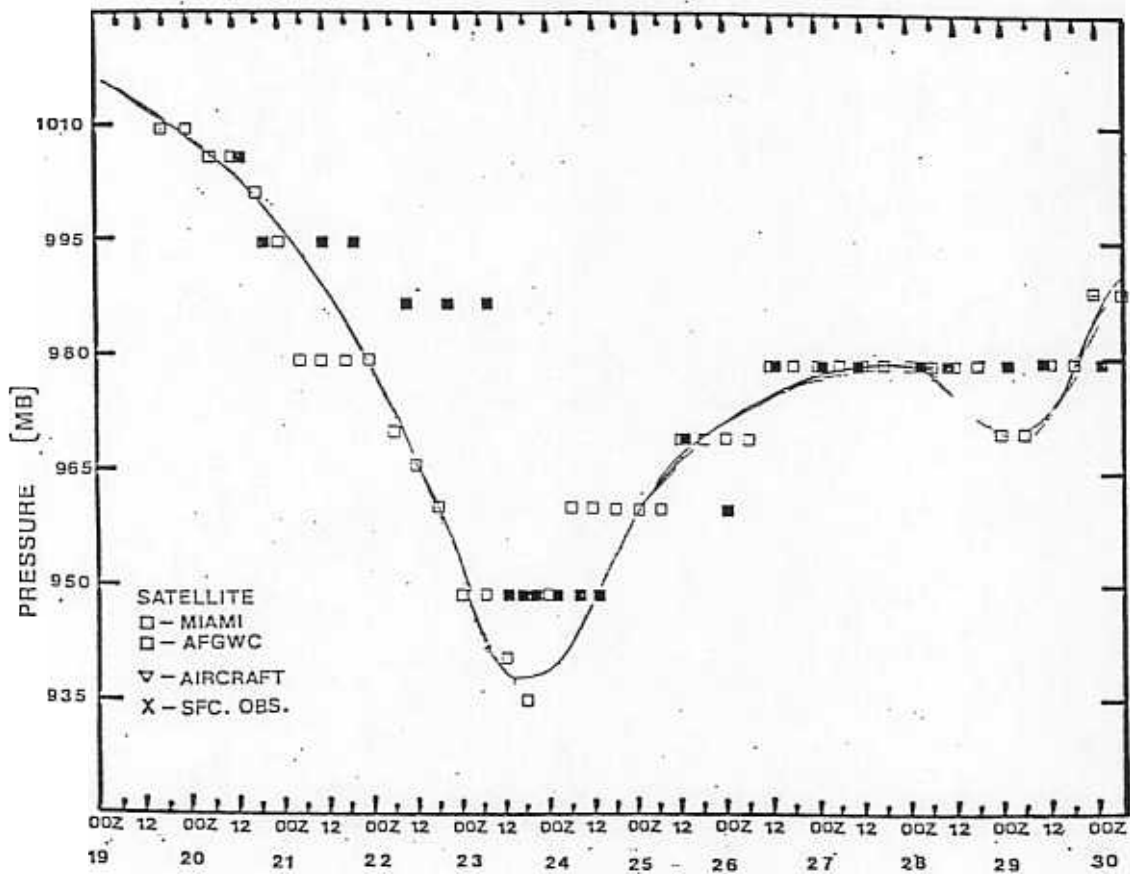


Fig. 2... Best track minimum central pressure curve for Hurricane Helene, 19-30 September, 1988.

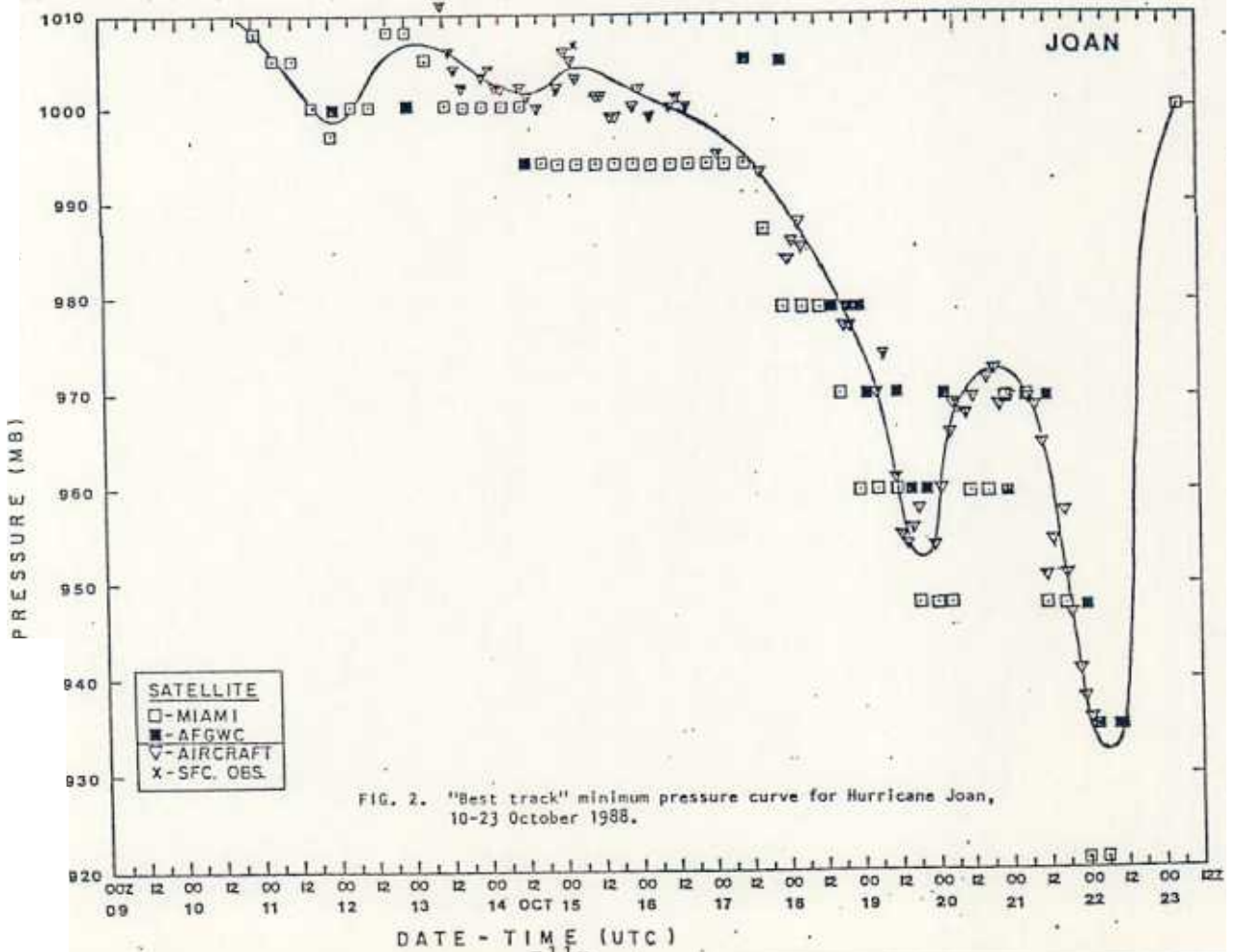
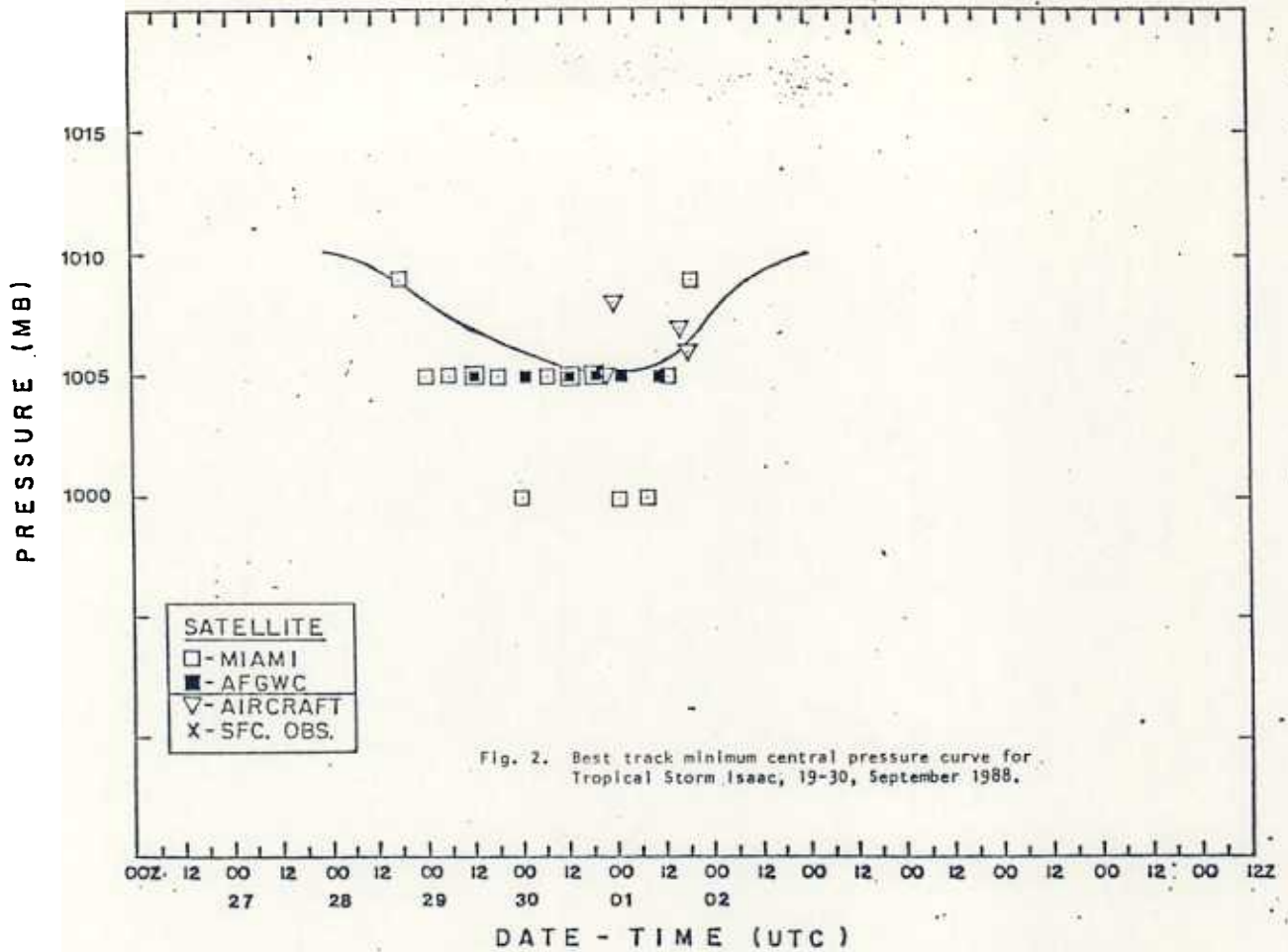
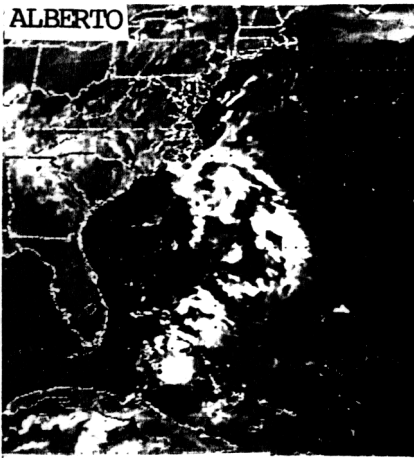
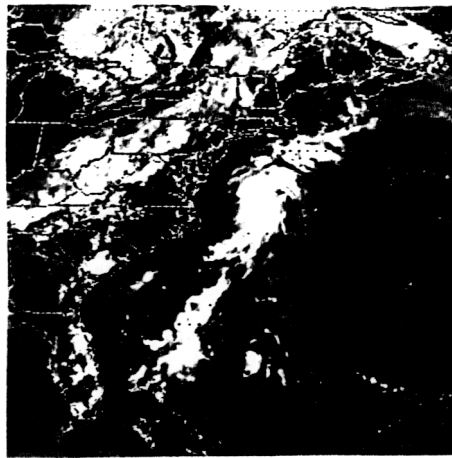




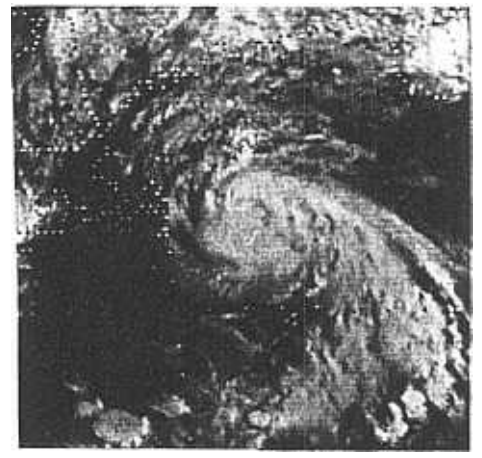
Figure 3. Daily satellite photographs of 1988 North Atlantic tropical cyclones.



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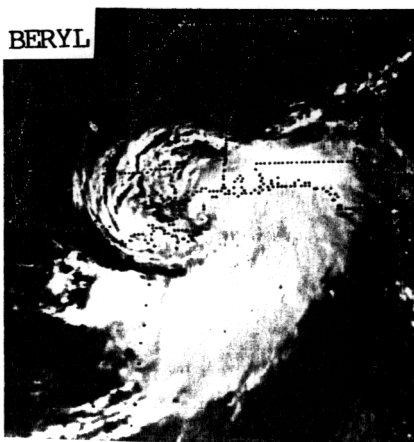
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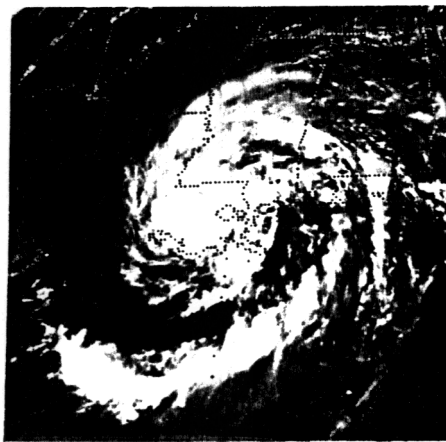
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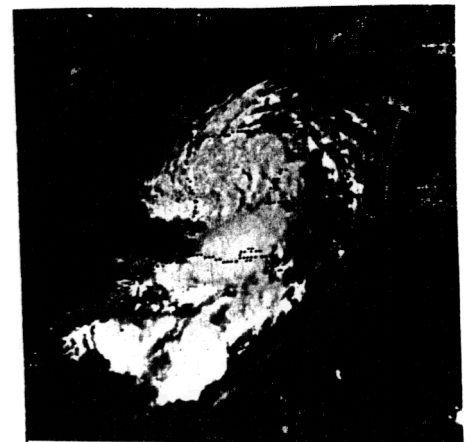
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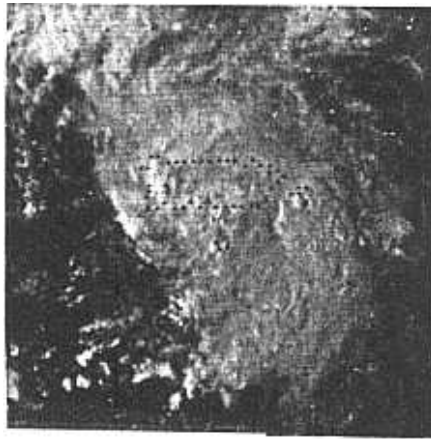
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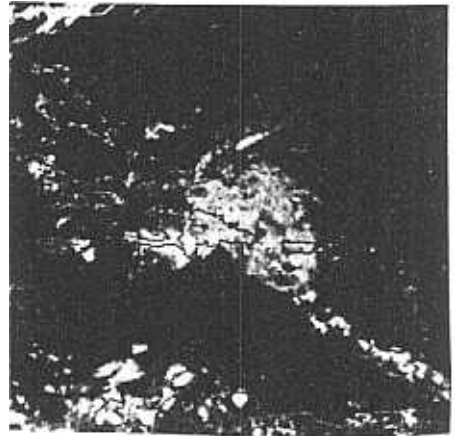
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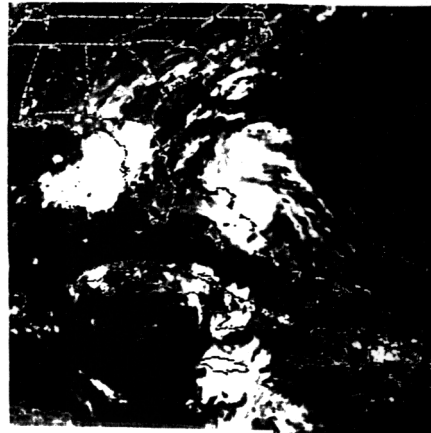
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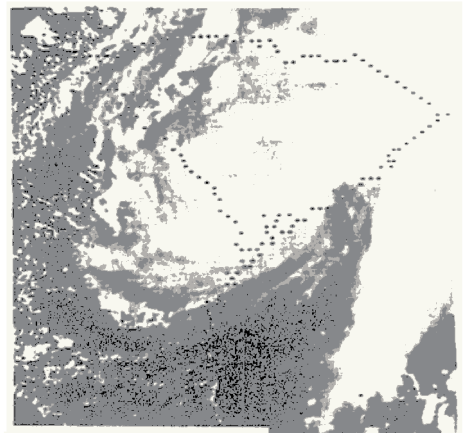
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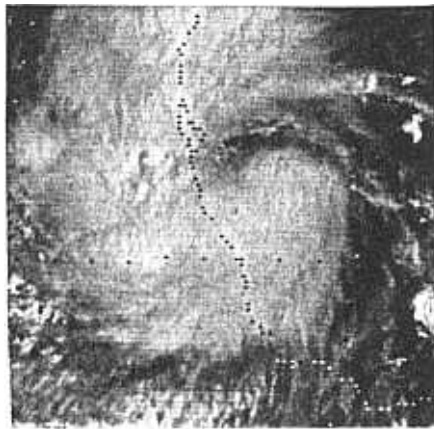


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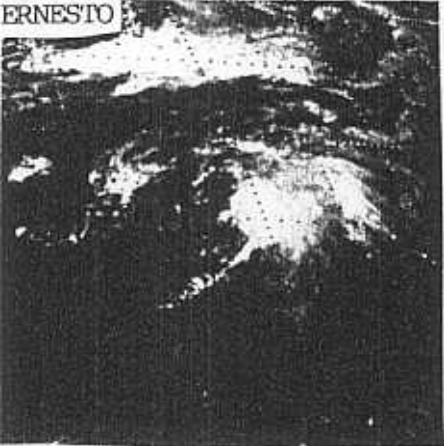
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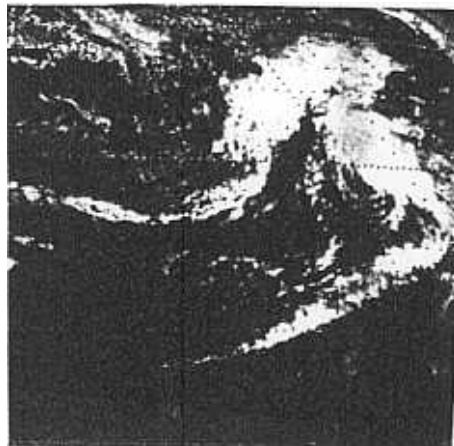
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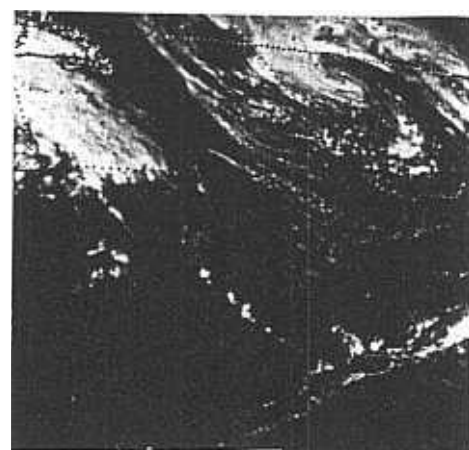
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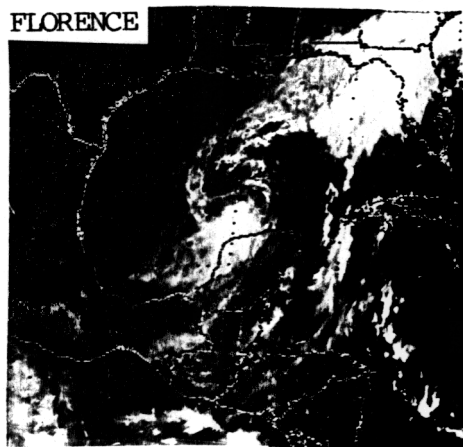
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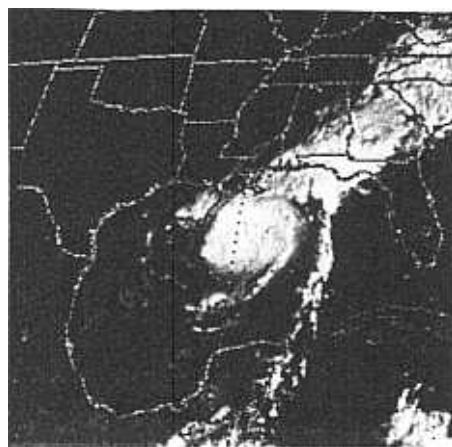
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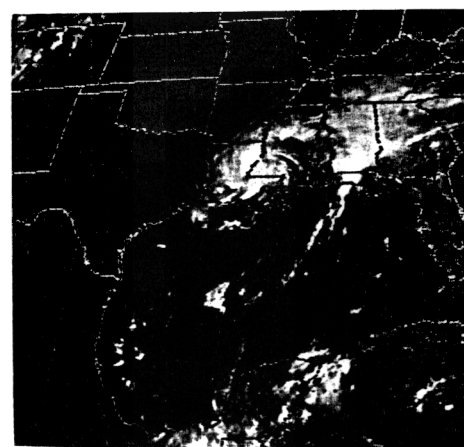
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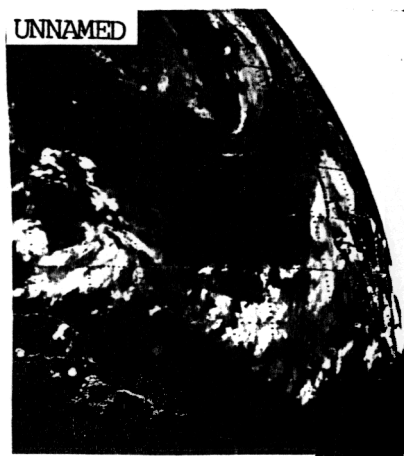
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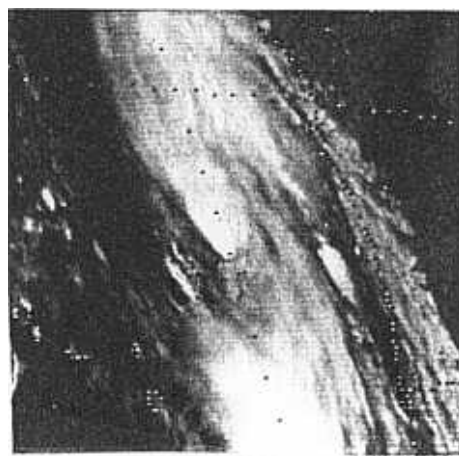
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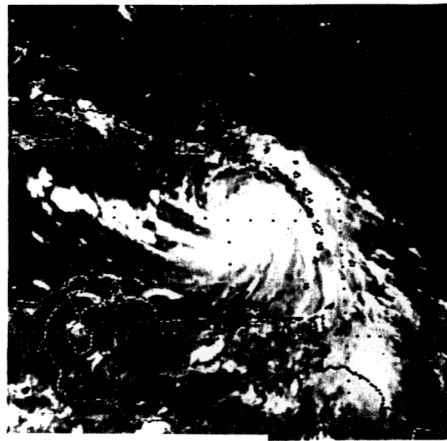
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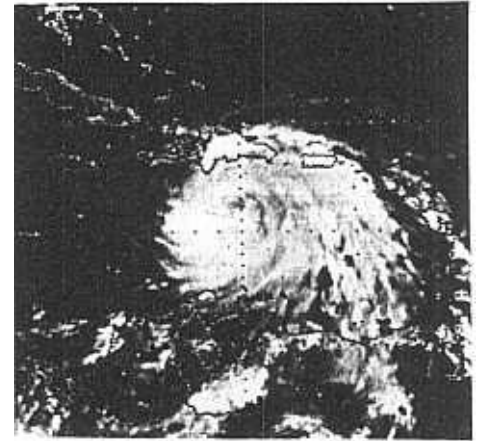
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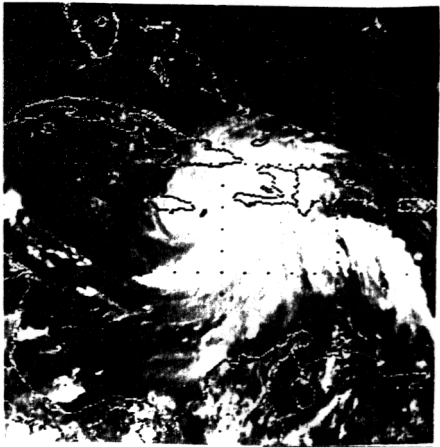
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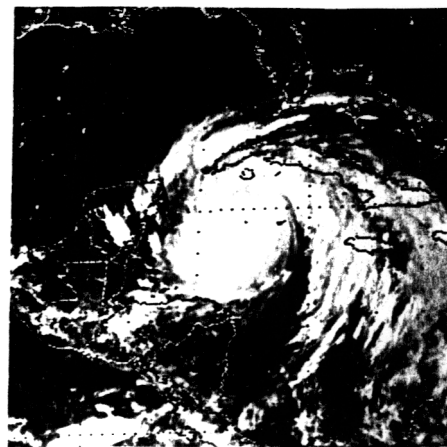
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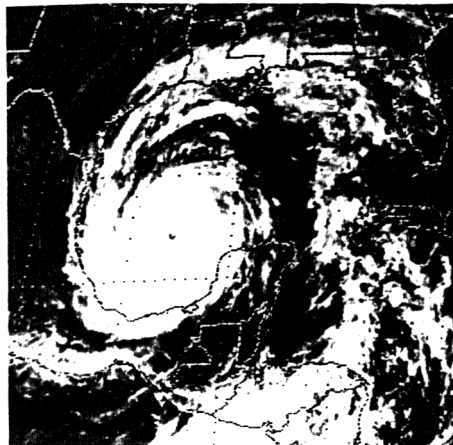
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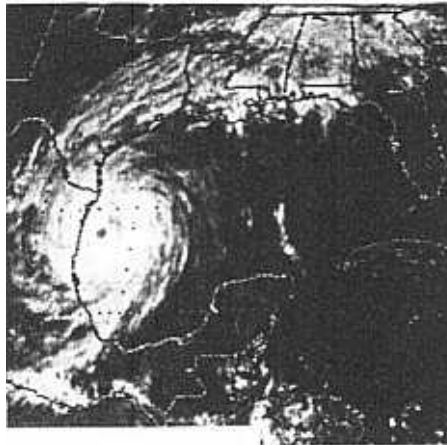
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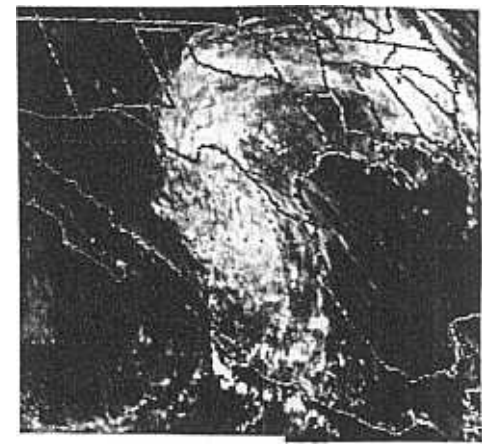
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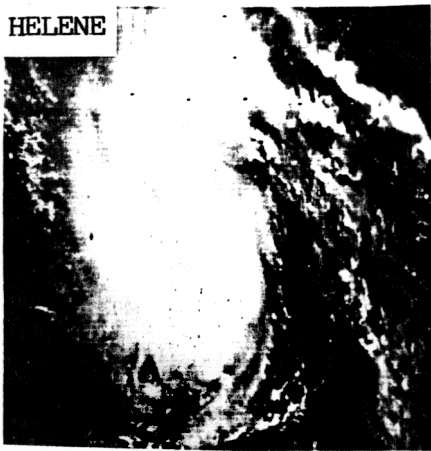


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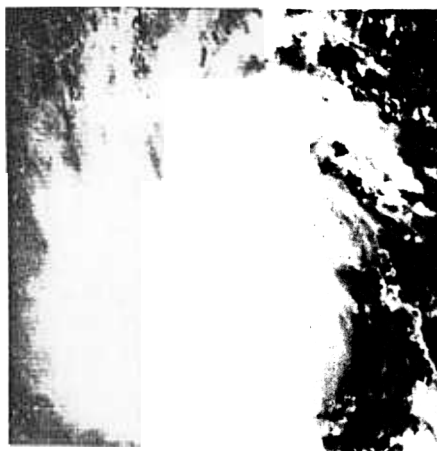


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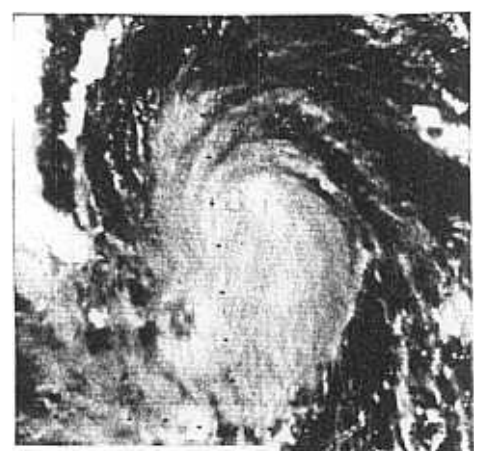
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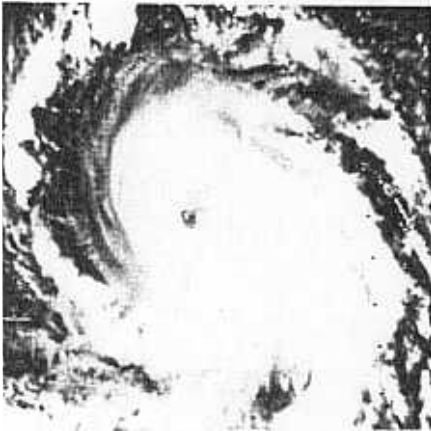
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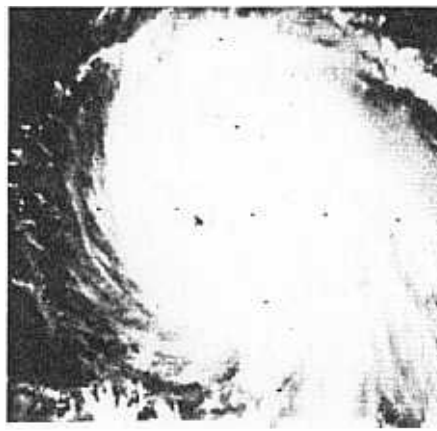
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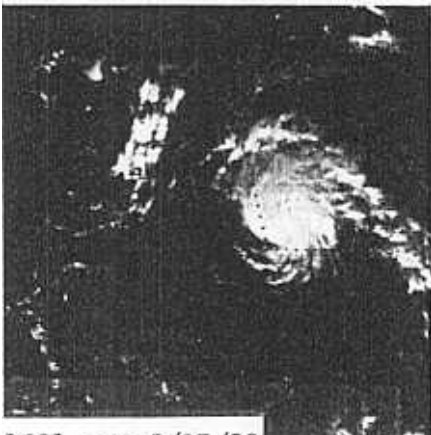
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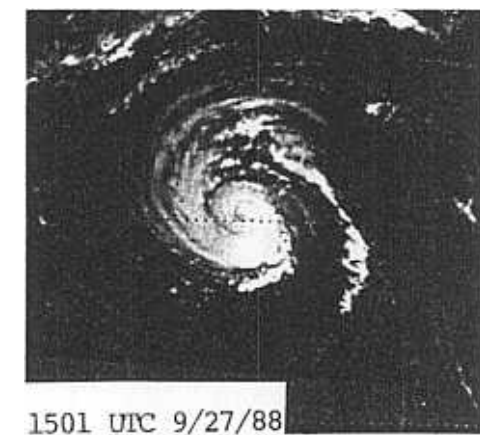
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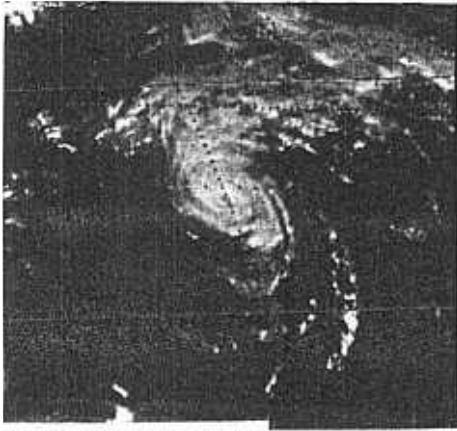


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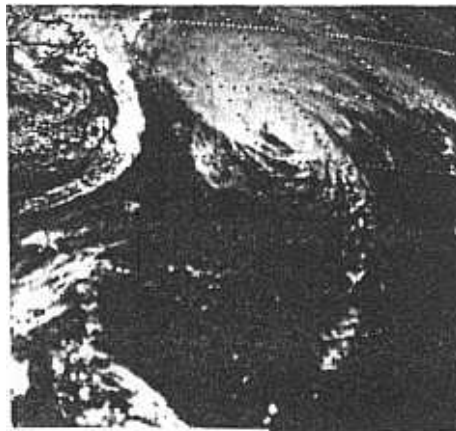


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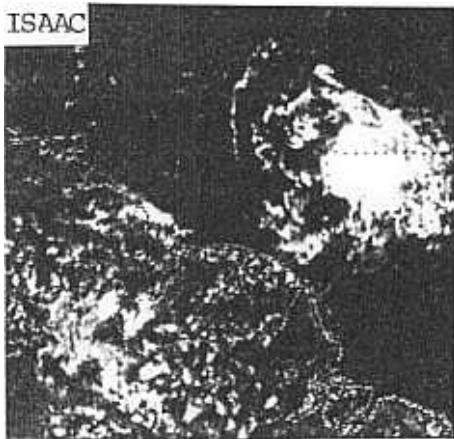




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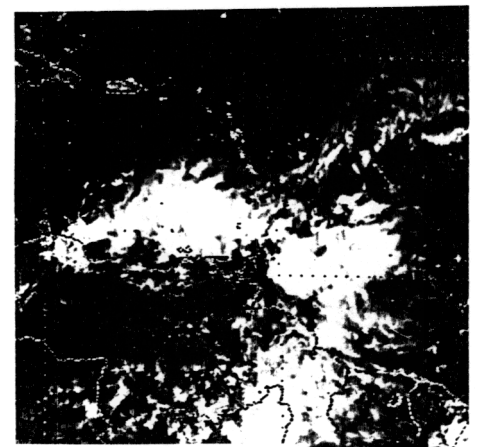
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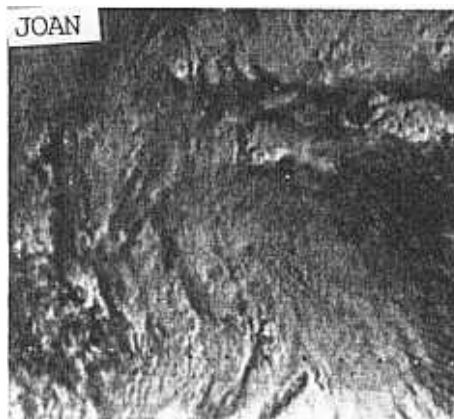
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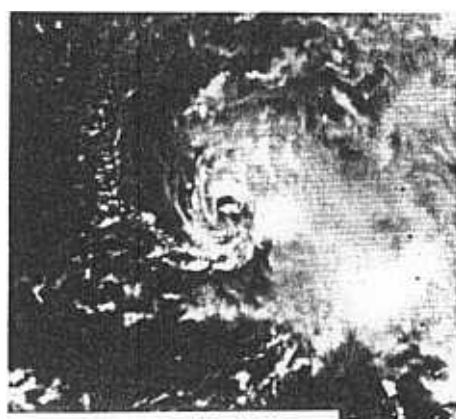
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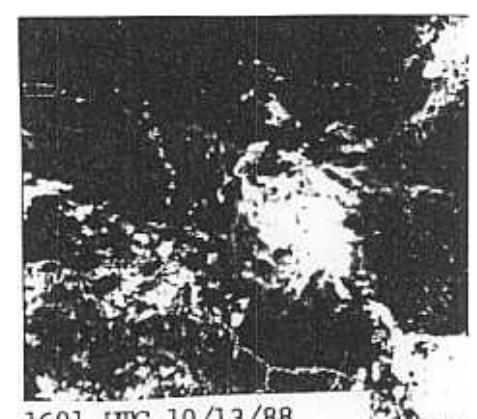
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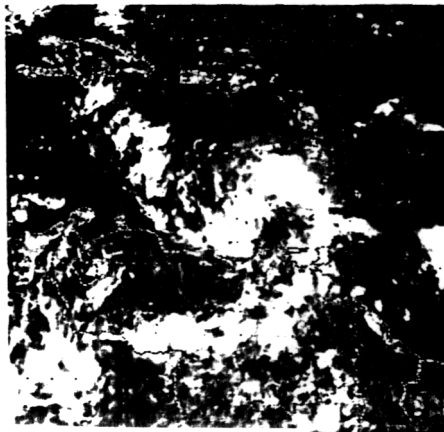
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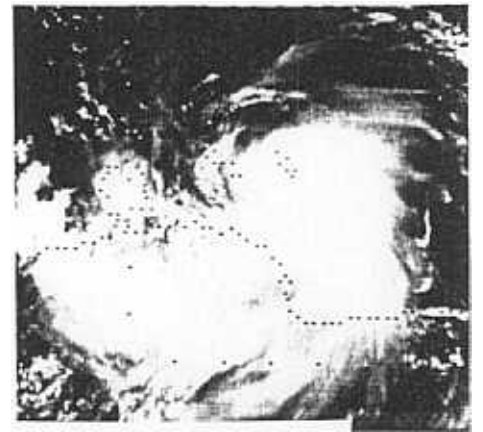
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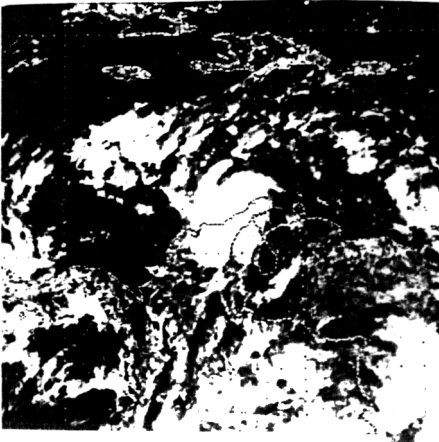
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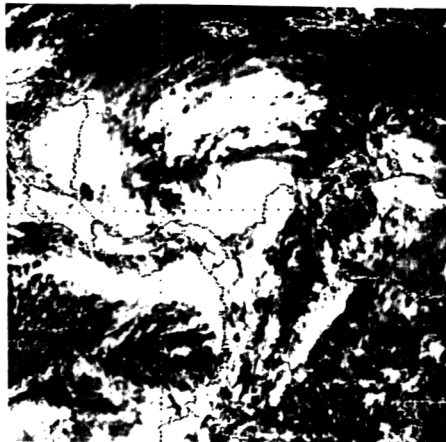
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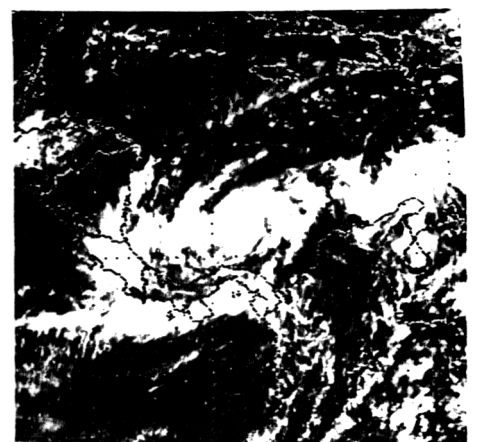
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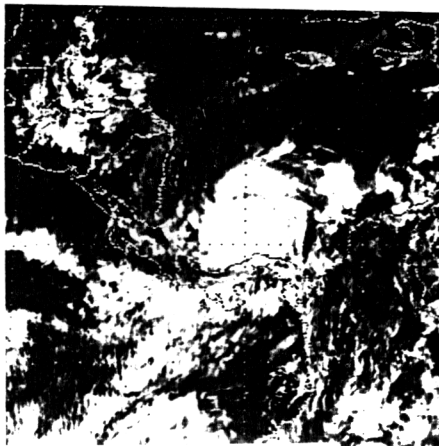
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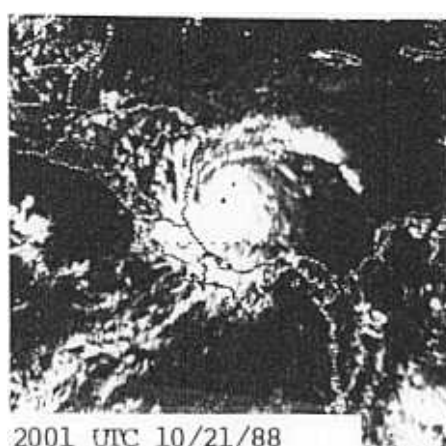
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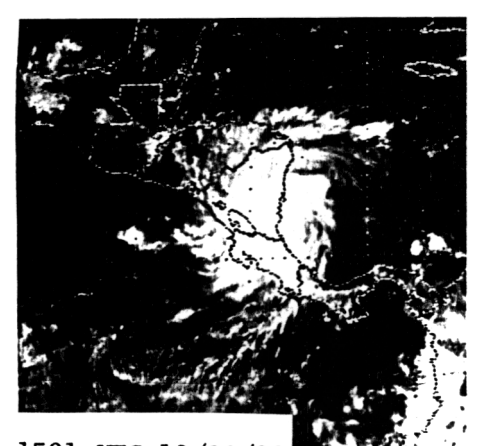
1601 UTC 10/19/88  
955 mb



1501 UTC 10/20/88  
972 mb



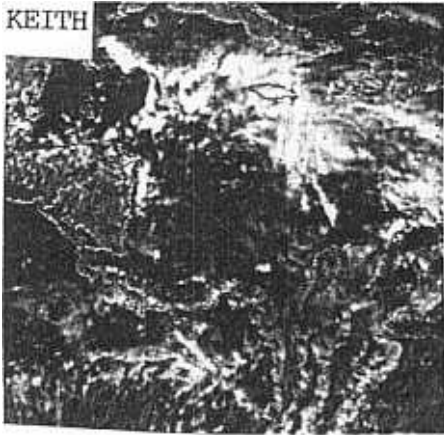
2001 UTC 10/21/88  
950 mb



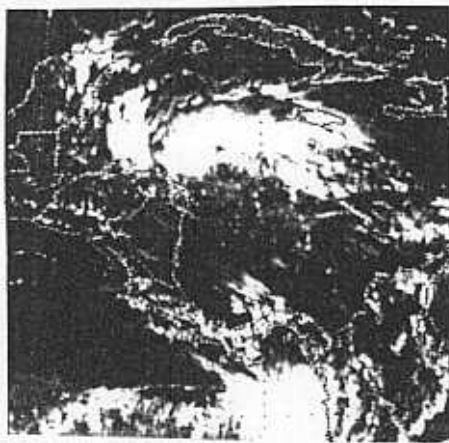
1501 UTC 10/22/88  
960 mb



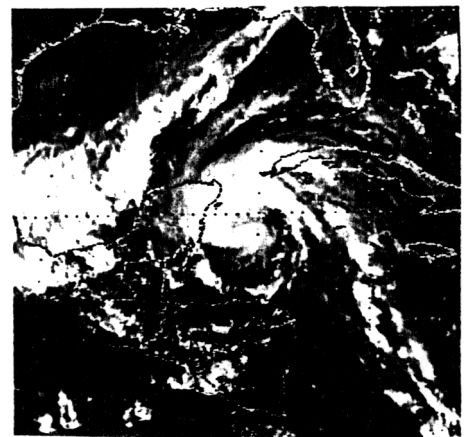
KEITH



1801 UTC 11/18/88  
1008



1901 UTC 11/19/88  
1006 mb



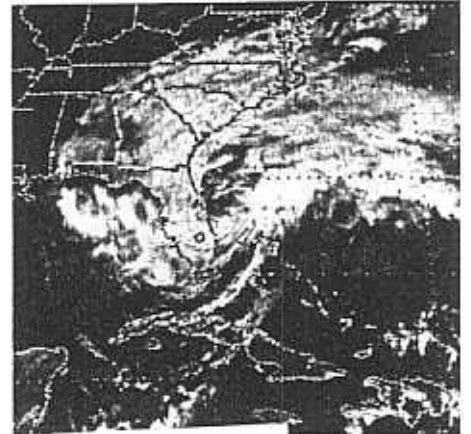
1901 UTC 11/20/88  
996 mb



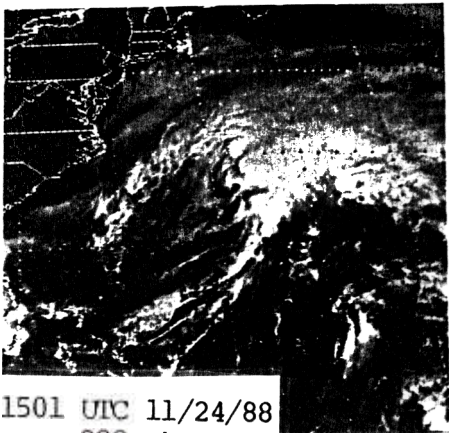
1910 UTC 11/21/88  
990



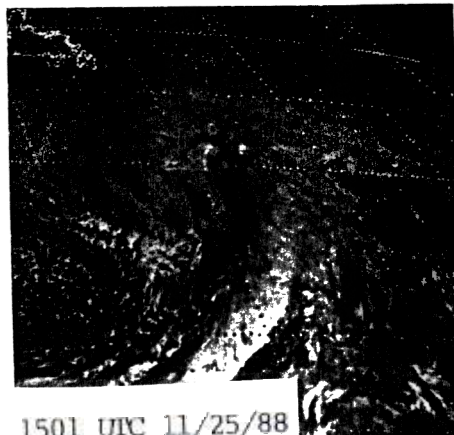
1801 UTC /22/88  
993 mb



1804 UTC 11/23/88  
998



1501 UTC 11/24/88  
988



1501 UTC 11/25/88  
962

Table 1. Verification of 1988 tropical storm and hurricane forecasts.

model	forecast period (hours)					
	0	12	24	36	48	72
Official (number of cases)	12 (152)	40 (152)	72 (131)	104 (118)	143 (108)	233 (89)
BAM	58 (54)	50 (54)	99 (50)	146 (43)	187 (40)	295 (36)
CLIPER	12 (151)	46 (151)	89 (131)	126 (118)	173 (108)	276 (89)
MFM	26 (56)	79 (56)	134 (52)	190 (48)	274 (45)	406 (37)
NHC72	12 (93)	47 (93)	88 (79)	145 (63)	209 (58)	344 (48)
NHC83	12 (144)	41 (144)	68 (128)	93 (115)	128 (105)	186 (87)
QLM	12 (64)	66 (64)	115 (59)	172 (53)	229 (50)	352 (40)
SANBAR	10 (53)	36 (53)	63 (46)	101 (43)	127 (39)	240 (30)

Track model forecast errors (average in nautical miles), Atlantic, 1988

Table 2a. Landfall prediction errors for 1988 tropical storms and hurricanes.

Following is a list of landfall prediction errors for tropical storms and hurricanes during 1988. Each error represents the distance (in nautical miles) from the predicted landfall point determined from the "Official" forecast issued 24 hours prior to the actual landfall point determined from the Best Track. Only tropical storms and hurricanes are included. In some cases the storm crossed an island when predicted to pass offshore. In such cases the perpendicular distance from the landfall point to the forecast track is taken as the landfall prediction error.

Storm Name	Category at Landfall	Date/Time (Z) of Landfall	Landfall Forecast Error (n.m.)	Location and remarks
ALBERTO	Tropical Storm	8/7/2200Z	75	Near Yarmouth, NS
BERYL	Tropical Storm	8/9/1200Z	75	Lake Borgne, LA
CHRIS	Tropical Storm	8/28/1500Z	200	Savannah, GA
DEBBY	Hurricane	8/31/0000Z	30	Tuxpan, MX
FLORENCE	Hurricane	9/10/0200Z	125	Southeast Louisiana
GILBERT	Hurricane	9/12/1700Z	60	Jamaica
"	"	9/14/1500Z	15	Cozumel, MX
"	"	9/16/2200Z	50	La Pesca, MX
JOAN	Tropical Storm	10/14/2200Z	130	Grenada, Windward Islands
"	"	10/17/0600Z	45	Guajira Peninsula
"	Hurricane	10/22/1000Z	10	Bluefields, Nicaragua
KEITH	Tropical Storm	11/21/0800Z	130	Cancun, MX
"	"	11/23/0700Z	5	Sarasota, FL

Table 2b. Nineteen-year summary of errors (n.mi.) in the prediction of landfall points for Atlantic tropical storms and hurricanes during the period of 1970-1988.

	United States Landfalls	All Landfalls
1988 Mean 24 Hour Landfall Prediction Error (number of cases)	100 (04)	69 (13)
19 year average 1970-1988	58 (40)	61 (87)

Table 3a. Tropical cyclone warning lead time of 1988 United States landfalling tropical storms and hurricanes.

Storm Name	Category at Landfall	Date/Time (Z) of Landfall	Location of landfall	Type and Time (Z) of Warnings Issued for Point of Landfall	Warning Lead Time (hours)
ALBERTO	(No U.S. Landfall)				
BERYL	Tropical Storm	8/9/1200Z	Lake Borgne, LA.	Tropical storm warnings mouth of Miss. R. to Pensacola, FL 8/8/1000Z	14
CHRIS	Tropical Storm	8/9/1500Z	Savannah, GA.	Tropical storm warnings Savannah GA to Cape Hatteras, NC. 8/28/1200Z	3
DEBBY	(No U.S. Landfall)				
ERNESTO	(No U.S. Landfall)				
FLORENCE	Hurricane	9/10/0200Z	Southeast Louisiana (mouth of Miss. R.)	Hurricane warnings east of Cameron, LA to Pensacola, FL 9/9/1300Z	11
UNNAMED	(No U.S. landfall)			Tropical storm warnings east of Pensacola, FL to Apalachicola, FL 9/9/1300Z	11
GILBERT	Hurricane	9/16/2200Z	La Pesca, MX	Hurricane warnings Brownsville, TX to Port O Connor, TX 9/15/1200Z	34
HELENE	(No U.S. landfall)				
ISAAC	(No U.S. landfall)				
JOAN	(No U.S. landfall)				
KEITH	Tropical storm	11/23/0700Z	Sarasota, FL	Tropical storm warnings Cape Sable, FL to Cedar Key, FL 11/22/1000Z	21
				Tropical storm warnings Jupiter Inlet, FL to Savannah, GA 12/22/2200Z	9

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Table 3b. Average warning lead times for all tropical storms and hurricanes and hurricanes alone, which made landfall on the mainland of the United States during 1988 and during the 19 year period of 1970-1988.

	All Tropical Storms and Hurricanes		All Hurricanes	
	1988	1970-1988	1988	1970-1988
Average Lead Time (hours) (number of cases)			22 2	

Table 4. 1988 Atlantic hurricane season statistics

number	name	class <sup>1</sup>	dates <sup>2</sup>	maximum sustained wind (kt)	lowest press. (mb)	U.S. damage (\$millions)	deaths
1	Alberto	T	5-8 Aug	35	1002		
2	Beryl	T	8-10 Aug	45	1001	3.0	1
3	Chris	T	21-29 Aug	45	1005	0.5	4
4	Debby	H	31 Aug-5 Sep	65	991		10
5	Ernesto	T	3-5 Sep	55	994		
6	Florence	H	7-11 Sep	70	982	2.5	1
7	unnamed	T	7-10 Sep	50	994		
8	Gilbert	H	8-19 Sep	160	888	50.0	318
9	Helene	H	19-30 Sep	125	938		
10	Isaac	T	28 Sep-1 Oct	40			
11	Joan	H	10-23 Oct	125	932		216
12	Keith	T	17-24 Nov	60	985	3.0	

<sup>1</sup> T: tropical storm, wind speed 34 - 63 kt.  
H: hurricane, wind speed 64 kt or higher.

<sup>2</sup> Dates begin at 0000 UTC and include tropical depression stage.

Table 5a. Best track, initial and forecast positions, initial position error and forecast errors 1988  
Atlantic tropical cyclones.

OFFICIAL FORECASTS											ALBERTO AUG 27-AUG 28 1988										
DATE/TIME LAT	BEST TRACK		OPERATIONAL POSITION ERROR		12HR FORECAST ERROR		24HR FORECAST ERROR		36HR FORECAST ERROR		48HR FORECAST ERROR		72HR FORECAST ERROR		NM	NM	NM	NM	NM	NM	
	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.							
031712	41.5	59.2	41.2	59.3	22	44.5	45.0	36	47.5	53.5	50.0	50.0									
031718	43.0	57.5	42.9	57.4	7	44.5	45.0	36	47.5	53.5	50.0	50.0									
031800	43.0	55.5				40.0	40.0	39	50.0	55.0											
031805	41.2	53.5																			
MEAN VECTOR ERRORS (NM)					15	33					0					0					
NUMBER OF CASES					2	2					0					0					

OFFICIAL FORECASTS											BERYL AUG 28-AUG 29 1988										
DATE/TIME LAT	BEST TRACK		OPERATIONAL POSITION ERROR		12HR FORECAST ERROR		24HR FORECAST ERROR		36HR FORECAST ERROR		48HR FORECAST ERROR		72HR FORECAST ERROR		NM	NM	NM	NM	NM	NM	
	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.							
031812	29.7	84.3	30.0	84.5	15	29.7	84.3	70	29.7	84.3	31.0	84.0									
031818	29.4	82.2	29.7	82.0	137	29.4	82.2	137	29.4	82.2	31.0	82.0									
031900	27.3	80.1	27.3	80.1	9	27.3	80.1	9	27.3	80.1	31.0	80.0									
031905	27.0	80.5	27.0	80.5		27.0	80.5		27.0	80.5	31.0	80.0									
031912	30.1	80.5	30.1	80.5		30.1	80.5		30.1	80.5	31.0	80.0									
031915	30.1	80.9	30.1	80.9		30.1	80.9		30.1	80.9	31.0	80.0									
MEAN VECTOR ERRORS (NM)					17	54					104					0					
NUMBER OF CASES					4	4					2					0					

OFFICIAL FORECASTS											CHRIS AUG 27-AUG 28 1988										
DATE/TIME LAT	BEST TRACK		OPERATIONAL POSITION ERROR		12HR FORECAST ERROR		24HR FORECAST ERROR		36HR FORECAST ERROR		48HR FORECAST ERROR		72HR FORECAST ERROR		NM	NM	NM	NM	NM	NM	
	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.							
082805	28.2	80.0	27.0	80.0	43	31.5	80.3	190	35.0	77.5	35.2	77.5									
082818	32.8	81.1	31.0	80.5		34.5	82.5		25.0	75.0	43.0	70.5	37.0	75.0	41.0	68.0					
											45.0	53.5	45.0	53.5							
MEAN VECTOR ERRORS (NM)					43	193					0					0					
NUMBER OF CASES					1	1					0					0					

OFFICIAL FORECASTS											DEBBY SEP 02-SEP 03 1988										
DATE/TIME LAT	BEST TRACK		OPERATIONAL POSITION ERROR		12HR FORECAST ERROR		24HR FORECAST ERROR		36HR FORECAST ERROR		48HR FORECAST ERROR		72HR FORECAST ERROR		NM	NM	NM	NM	NM	NM	
	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.							
092200	20.7	95.1	20.8	95.1	1	20.9	95.3	22	21.3	92.4	21.9	90.0									
092212	21.8	95.7	21.8	95.7		21.8	95.7		21.3	92.4	21.9	90.0									
092318	21.8	96.3	21.8	96.3		21.8	96.3		21.3	92.4	21.9	90.0									
092330	20.7	97.3	20.7	97.3		20.7	97.3		21.3	99.0	22.5	99.0									
MEAN VECTOR ERRORS (NM)					2	24					0					0					
NUMBER OF CASES					2	2					0					0					



ICLAL FORECAST ERNESTO

DATE/TIME GMT	BEST TRACK		OPERATIONAL POSITION		FORECAST ERROR NM	12HR FORECAST			24HR FORECAST			36HR FOR		T 30 VM	FORECAST ERROR		72 L	AST ERROR NM
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR NM	LAT.	LONG.	ERROR NM	LAT.	LONG.		LONG.	ERROR NM		
090318	35.2	93.1	35.2	93.1	0	37.0	95.5	103	40.0	99.0	193	44.0	97.0					
090320	35.5	92.5	35.5	92.5	10	38.0	95.5	121	44.0	99.0	233	48.0	97.0					
090322	36.0	92.0	36.0	92.0	11	40.0	95.0	85	43.0	97.0								
090324	36.0	91.5	36.0	91.5	0	40.5	95.0	155										
090326	36.0	91.0	36.0	91.0		42.0	97.0											

MEAN VECTOR ERRORS (NM) 6 112 9 0 0 0

NUMBER OF CASES 6 4 2 0 0 0

DATE/TIME GMT	BEST TRACK		OPERATIONAL POSITION		FORECAST ERROR NM	12HR FORECAST			24HR FORECAST			36HR FORECAST		48HR FORECAST		72HR FORECAST	
	LAT.	LONG.	LAT.	LONG.		LAT.	LONG.	ERROR NM	LAT.	LONG.	ERROR NM	LAT.	LONG.	ERROR NM	LAT.	LONG.	ERROR NM
091718	22.7	100.0	22.7	100.0	11	22.7	99.0	22	24.5	99.5	13	26.0	99.0	144	31.0	99.0	
091720	22.0	99.0	22.0	99.0	5	22.0	99.0	15	24.0	99.0	14	26.0	99.0	138	31.0	99.0	
091722	22.0	98.0	22.0	98.0	1	22.0	98.0	15	24.0	99.0	14	26.0	99.0	276	31.0	99.0	
091724	22.0	97.0	22.0	97.0	1	22.0	97.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091726	22.0	96.0	22.0	96.0	1	22.0	96.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091728	22.0	95.0	22.0	95.0	1	22.0	95.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091730	22.0	94.0	22.0	94.0	1	22.0	94.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091732	22.0	93.0	22.0	93.0	1	22.0	93.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091734	22.0	92.0	22.0	92.0	1	22.0	92.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091736	22.0	91.0	22.0	91.0	1	22.0	91.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091738	22.0	90.0	22.0	90.0	1	22.0	90.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091740	22.0	89.0	22.0	89.0	1	22.0	89.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091742	22.0	88.0	22.0	88.0	1	22.0	88.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091744	22.0	87.0	22.0	87.0	1	22.0	87.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091746	22.0	86.0	22.0	86.0	1	22.0	86.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091748	22.0	85.0	22.0	85.0	1	22.0	85.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091750	22.0	84.0	22.0	84.0	1	22.0	84.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091752	22.0	83.0	22.0	83.0	1	22.0	83.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091754	22.0	82.0	22.0	82.0	1	22.0	82.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091756	22.0	81.0	22.0	81.0	1	22.0	81.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091758	22.0	80.0	22.0	80.0	1	22.0	80.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091800	22.0	79.0	22.0	79.0	1	22.0	79.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091802	22.0	78.0	22.0	78.0	1	22.0	78.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091804	22.0	77.0	22.0	77.0	1	22.0	77.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091806	22.0	76.0	22.0	76.0	1	22.0	76.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091808	22.0	75.0	22.0	75.0	1	22.0	75.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091810	22.0	74.0	22.0	74.0	1	22.0	74.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091812	22.0	73.0	22.0	73.0	1	22.0	73.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091814	22.0	72.0	22.0	72.0	1	22.0	72.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091816	22.0	71.0	22.0	71.0	1	22.0	71.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091818	22.0	70.0	22.0	70.0	1	22.0	70.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091820	22.0	69.0	22.0	69.0	1	22.0	69.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091822	22.0	68.0	22.0	68.0	1	22.0	68.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091824	22.0	67.0	22.0	67.0	1	22.0	67.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091826	22.0	66.0	22.0	66.0	1	22.0	66.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091828	22.0	65.0	22.0	65.0	1	22.0	65.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091830	22.0	64.0	22.0	64.0	1	22.0	64.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091832	22.0	63.0	22.0	63.0	1	22.0	63.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091834	22.0	62.0	22.0	62.0	1	22.0	62.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091836	22.0	61.0	22.0	61.0	1	22.0	61.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091838	22.0	60.0	22.0	60.0	1	22.0	60.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091840	22.0	59.0	22.0	59.0	1	22.0	59.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091842	22.0	58.0	22.0	58.0	1	22.0	58.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091844	22.0	57.0	22.0	57.0	1	22.0	57.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091846	22.0	56.0	22.0	56.0	1	22.0	56.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091848	22.0	55.0	22.0	55.0	1	22.0	55.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091850	22.0	54.0	22.0	54.0	1	22.0	54.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091852	22.0	53.0	22.0	53.0	1	22.0	53.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091854	22.0	52.0	22.0	52.0	1	22.0	52.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091856	22.0	51.0	22.0	51.0	1	22.0	51.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091858	22.0	50.0	22.0	50.0	1	22.0	50.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091900	22.0	49.0	22.0	49.0	1	22.0	49.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091902	22.0	48.0	22.0	48.0	1	22.0	48.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091904	22.0	47.0	22.0	47.0	1	22.0	47.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091906	22.0	46.0	22.0	46.0	1	22.0	46.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091908	22.0	45.0	22.0	45.0	1	22.0	45.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091910	22.0	44.0	22.0	44.0	1	22.0	44.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091912	22.0	43.0	22.0	43.0	1	22.0	43.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091914	22.0	42.0	22.0	42.0	1	22.0	42.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091916	22.0	41.0	22.0	41.0	1	22.0	41.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091918	22.0	40.0	22.0	40.0	1	22.0	40.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091920	22.0	39.0	22.0	39.0	1	22.0	39.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091922	22.0	38.0	22.0	38.0	1	22.0	38.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091924	22.0	37.0	22.0	37.0	1	22.0	37.0	14	24.0	99.0	14	26.0	99.0		31.0	99.0	
091926	22.0	36.0	22.0	36.0	1	22.0	36.0	14	24.0	99.0	14	26.0</					





Table 5a. continued.

OFFICIAL FORECASTS HELENE SEP 20-SEP 31 1988

DATE/TIME LAT. LONG.	BEST TRACK LAT. LONG.	OPERATIONAL POSITION LAT. LONG.	OPERATIONAL ERROR NM	12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST	
				LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
090300Z	11.4 59.0	11.1 57.3	51	12.2	58.3	13.2	59.4	14.3	60.5	15.5	61.0	17.5	62.5
100100Z	11.8 57.7	11.7 57.0		12.9	59.5	14.0	61.5	15.0	62.5	16.0	63.0	18.0	64.5
100105Z	12.0 59.5	11.5 58.0		12.5	59.2	13.5	62.0	14.5	64.0	15.5	65.5	17.5	67.0
MEAN VECTOR NUMBER OF CASES				02	133	0	0	0	0	0	0	0	0

OFFICIAL FORECASTS ISAAC SEP 30-OCT 31 1981

DATE/TIME LAT. LONG.	BEST TRACK LAT. LONG.	OPERATIONAL POSITION LAT. LONG.	OPERATIONAL ERROR NM	12HR FORECAST		24HR FORECAST		36HR FORECAST		48HR FORECAST		72HR FORECAST	
				LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.	LAT.	LONG.
093010Z	11.4 59.0	11.1 57.3	51	12.2	58.3	13.2	59.4	14.3	60.5	15.5	61.0	17.5	62.5
100100Z	11.8 57.7	11.7 57.0		12.9	59.5	14.0	61.5	15.0	62.5	16.0	63.0	18.0	64.5
100105Z	12.0 59.5	11.5 58.0		12.5	59.2	13.5	62.0	14.5	64.0	15.5	65.5	17.5	67.0
MEAN VECTOR NUMBER OF CASES				02	133	0	0	0	0	0	0	0	0

MEAN VECTOR NUMBER OF CASES	124	38	219	34
1	111	111	111	111
2	111	111	111	111
3	111	111	111	111
4	111	111	111	111
5	111	111	111	111
6	111	111	111	111
7	111	111	111	111
8	111	111	111	111
9	111	111	111	111
10	111	111	111	111
11	111	111	111	111
12	111	111	111	111
13	111	111	111	111
14	111	111	111	111
15	111	111	111	111
16	111	111	111	111
17	111	111	111	111
18	111	111	111	111
19	111	111	111	111
20	111	111	111	111
21	111	111	111	111
22	111	111	111	111
23	111	111	111	111
24	111	111	111	111
25	111	111	111	111
26	111	111	111	111
27	111	111	111	111
28	111	111	111	111
29	111	111	111	111
30	111	111	111	111
31	111	111	111	111
32	111	111	111	111
33	111	111	111	111
34	111	111	111	111
35	111	111	111	111
36	111	111	111	111
37	111	111	111	111
38	111	111	111	111
39	111	111	111	111
40	111	111	111	111
41	111	111	111	111
42	111	111	111	111
43	111	111	111	111
44	111	111	111	111
45	111	111	111	111
46	111	111	111	111
47	111	111	111	111
48	111	111	111	111
49	111	111	111	111
50	111	111	111	111
51	111	111	111	111
52	111	111	111	111
53	111	111	111	111
54	111	111	111	111
55	111	111	111	111
56	111	111	111	111
57	111	111	111	111
58	111	111	111	111
59	111	111	111	111
60	111	111	111	111
61	111	111	111	111
62	111	111	111	111
63	111	111	111	111
64	111	111	111	111
65	111	111	111	111
66	111	111	111	111
67	111	111	111	111
68	111	111	111	111
69	111	111	111	111
70	111	111	111	111
71	111	111	111	111
72	111	111	111	111
73	111	111	111	111
74	111	111	111	111
75	111	111	111	111
76	111	111	111	111
77	111	111	111	111
78	111	111	111	111
79	111	111	111	111
80	111	111	111	111
81	111	111	111	111
82	111	111	111	111
83	111	111	111	111
84	111	111	111	111
85	111	111	111	111
86	111	111	111	111
87	111	111	111	111
88	111	111	111	111
89	111	111	111	111
90	111	111	111	111
91	111	111	111	111
92	111	111	111	111
93	111	111	111	111
94	111	111	111	111
95	111	111	111	111
96	111	111	111	111
97	111	111	111	111
98	111	111	111	111
99	111	111	111	111
100	111	111	111	111

MEAN VECTOR NUMBER OF CASES (M)S

OP  
OS  
AT

34

AS  
RS  
N

34

DR

LAT.

D

T  
OR  
NM

219  
34





Table 5b. Best track forecast wind speed verification for 1988 Atlantic tropical cyclones.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS						
ERRORS(KTS) FOR STORM ALBERTO						
	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 082712Z DATA	.0	.0				
FORECAST MADE FROM 082718Z DATA	.0	.0				
FORECAST MADE FROM 082730Z DATA						
FORECAST MADE FROM 082736Z DATA						

SUMMARY: STORM ALBERTO

MEAN ERRORS (KTS)	.0	.0	.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	.0	.0	.0	.0	.0	.0
STANDARD ERROR (KTS)	.0	.0	.0	.0	.0	.0
NUMBER OF CASES	2	2	2	2	2	2

VERIFICATION OF OFFICIAL MAX WIND FORECASTS						
ERRORS(KTS) FOR STORM BERYL						
	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 082712Z DATA	5.0	5.0	5.0			
FORECAST MADE FROM 082718Z DATA	5.0	5.0	15.0			
FORECAST MADE FROM 082730Z DATA	5.0	5.0				
FORECAST MADE FROM 082736Z DATA						
FORECAST MADE FROM 082742Z DATA						

SUMMARY: STORM BERYL

MEAN ERRORS (KTS)	5.0	5.0	5.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	2.5	3.8	12.2	.0	.0	.0
STANDARD ERROR (KTS)	2.2	2.5	7.1	.0	.0	.0
NUMBER OF CASES	2	2	2	2	2	2

VERIFICATION OF OFFICIAL MAX WIND FORECASTS						
ERRORS(KTS) FOR STORM CHRIS						
	INITIAL	12HR	24HR	36HR	48HR	72HR
FORECAST MADE FROM 082706Z DATA	.0	15.0				
FORECAST MADE FROM 082712Z DATA						
FORECAST MADE FROM 082718Z DATA						

SUMMARY: STORM CHRIS

MEAN ERRORS (KTS)	.0	15.0	.0	.0	.0	.0
MEAN ABSOLUTE ERROR (KTS)	.0	15.0	.0	.0	.0	.0
STANDARD ERROR (KTS)	.0	.0	.0	.0	.0	.0
NUMBER OF CASES	1	1	1	1	1	1



Table 5b. continued.

VERIFICATION OF OFFICIAL MAX WIND FORECASTS

ERRORS(KTS) FOR STORM REPORT

	110774	1203	2640	8400	1203	7200
1	1	1	1	1	1	1
2	1	1	1	1	1	1
3	1	1	1	1	1	1
4	1	1	1	1	1	1
5	1	1	1	1	1	1
6	1	1	1	1	1	1
7	1	1	1	1	1	1
8	1	1	1	1	1	1
9	1	1	1	1	1	1
10	1	1	1	1	1	1
11	1	1	1	1	1	1
12	1	1	1	1	1	1
13	1	1	1	1	1	1
14	1	1	1	1	1	1
15	1	1	1	1	1	1
16	1	1	1	1	1	1
17	1	1	1	1	1	1
18	1	1	1	1	1	1
19	1	1	1	1	1	1
20	1	1	1	1	1	1
21	1	1	1	1	1	1
22	1	1	1	1	1	1
23	1	1	1	1	1	1
24	1	1	1	1	1	1
25	1	1	1	1	1	1
26	1	1	1	1	1	1
27	1	1	1	1	1	1
28	1	1	1	1	1	1
29	1	1	1	1	1	1
30	1	1	1	1	1	1
31	1	1	1	1	1	1
32	1	1	1	1	1	1
33	1	1	1	1	1	1
34	1	1	1	1	1	1
35	1	1	1	1	1	1
36	1	1	1	1	1	1
37	1	1	1	1	1	1
38	1	1	1	1	1	1
39	1	1	1	1	1	1
40	1	1	1	1	1	1
41	1	1	1	1	1	1
42	1	1	1	1	1	1
43	1	1	1	1	1	1
44	1	1	1	1	1	1
45	1	1	1	1	1	1
46	1	1	1	1	1	1
47	1	1	1	1	1	1
48	1	1	1	1	1	1
49	1	1	1	1	1	1
50	1	1	1	1	1	1
51	1	1	1	1	1	1
52	1	1	1	1	1	1
53	1	1	1	1	1	1
54	1	1	1	1	1	1
55	1	1	1	1	1	1
56	1	1	1	1	1	1
57	1	1	1	1	1	1
58	1	1	1	1	1	1
59	1	1	1	1	1	1
60	1	1	1	1	1	1
61	1	1	1	1	1	1
62	1	1	1	1	1	1
63	1	1	1	1	1	1
64	1	1	1	1	1	1
65	1	1	1	1	1	1
66	1	1	1	1	1	1
67	1	1	1	1	1	1
68	1	1	1	1	1	1
69	1	1	1	1	1	1
70	1	1	1	1	1	1
71	1	1	1	1	1	1
72	1	1	1	1	1	1
73	1	1	1	1	1	1
74	1	1	1	1	1	1
75	1	1	1	1	1	1
76	1	1	1	1	1	1
77	1	1	1	1	1	1
78	1	1	1	1	1	1
79	1	1	1	1	1	1
80	1	1	1	1	1	1
81	1	1	1	1	1	1
82	1	1	1	1	1	1
83	1	1	1	1	1	1
84	1	1	1	1	1	1
85	1	1	1	1	1	1
86	1	1	1	1	1	1
87	1	1	1	1	1	1
88	1	1	1	1	1	1
89	1	1	1	1	1	1
90	1	1	1	1	1	1
91	1	1	1	1	1	1
92	1	1	1	1	1	1
93	1	1	1	1	1	1
94	1	1	1	1	1	1
95	1	1	1	1	1	1
96	1	1	1	1	1	1
97	1	1	1	1	1	1
98	1	1	1	1	1	1
99	1	1	1	1	1	1
100	1	1	1	1	1	1

SUMMARY: STORM 3 INT

MEAN ERRORS (KTS)	3.4	1.7	2.7	5.2	1.5	3
MEAN ABSOLUTE ERROR (KTS)	9.7	15.2	25.7	29.2	22.2	31.3
STANDARD ERROR (KTS)	9.5	21.3	29.5	32.2	32.0	35.9
NUMBER OF CASES	33	33	23	23	24	23

33

C











LEGEND FOR TABLE 6

OBSERVATIONAL UNIT

Reconnaissance

AF = Air Force

NOAA = National Oceanographic and Atmospheric Administration

Satellite

GOES-7 = Geostationary Operational Environmental Satellite

DMSP-6 = Defense Meteorological Satellite Program (AF)

NOAA-9 = NOAA Polar Orbiting Satellite

Radar

National Weather Service Radar:

ERO-R = Brownsville, TX.

TBW-R = Tampa, FL.

SIL-R = Slidell, LA.

DAB-R = Daytona Beach, FL.

BTR-R = Baton Rouge, LA.

AYS-R = Waycross, GA.

MOB-R = Mobile, AL.

CHS-R = Charleston, SC.

NPA-R = Pensacola, FL.

RESOLUTION

Reconnaissance

Navigational Accuracy/Meteorological Accuracy (NM). (Example 5/5).

Satellite

Classification confidence\*, location and confidence\*\*, visible or infrared resolution (km).

- \* 1 =completely certain as to current intensity number used.
- 2 =tends to vary up and down by 1/2 T or S number.
- 3 =might vary up or down by one T or S number, or more.

- \*\*1 =well defined eye with certain picture registration.
- 2 =well defined eye with uncertain picture registration.
- 3 =well defined circulation center with certain picture registration.
- 4 =well defined circulation center with uncertain picture registration.
- 5 =poorly defined circulation center with certain picture registration.
- 6 =poorly defined circulation center with uncertain picture registration.

(Example-1,1, Vsbl,1 = classification confidence 1, location confidence 1, visible picture with 1 kilometer resolution.)

(Example-2,5, IR 8 = classification confidence 2, location confidence 5, infrared picture with 8 kilometer resolution.)

Table 6. Center Fix positions and intensity evaluations for 1988 North Atlantic Tropical Cyclones.

CENTER FIXES

TROPICAL STORM ALBERTO 5-8 AUGUST 1988

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
01	5	1800	32.1	77.5									GOES 7	-,3 VIS 1	
02	6	0000	32.8	76.3									GOES 7	-,5 VIS 1	
03	6	1700	36.9	73.8									GOES 7	-,3 VIS 1	
04	6	2100	37.4	73.5	25								GOES 7	-,3 VIS 2	
05	7	0000	38.0	73.0	25								GOES 7	2,5 IR 1	
06	7	0530	39.1	71.7	30		1009						GOES 7	2,5 IR 8	
07	7	1200	41.2	69.3	35		1005						GOES 7	2,5 VIS 1	
08	7	1320	41.3	68.6	45		1000						DMSP 6		
09	7	1800	42.9	67.4	35		1005						GOES 7	2,5 VIS 1	
10	8	0000	45.1	65.1	35		1005						GOES 7	2,5 VIS 1	



CENTER FIXES

TROPICAL STORM BERYL 8-10 AUGUST 1988

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LO.	SFC.	FLT.LVL.			OUT	IN					
1	8	0000	30.4	90.0	25		987						GOES 7	2,3 VIS 1	
2	8	0600	30.1	89.8									GOES 7	-,3 IR 8	
3	8	1200	29.6	89.7	25								GOES 7	2,3 IR 8	
4	8	1530	29.3	88.6								psbl center	NPA-R		
5	8	1630	29.5	88.8								psbl center	NPA-R		
6	8	1700	29.6	88.8								center fair	MOB-R		
7	8	1730	29.6	88.9								center poor	MOB-R		
8	8	1730	29.4	88.8								psbl center	NPA-R		
9	8	1800	29.7	88.9	35		1005						GOES 7	2,3 VIS 1	
10	8	1803	29.7	88.9								center good	MOB-R		
11	8	1830	29.6	88.8								psbl center	NPA-R		
12	8	1833	29.4	88.8								center good	MOB-R		
13	8	1901	27.4	88.9								center good	MOB-R		
14	8	1932	29.6	89.0								center good	MOB-R		
15	8	2002	29.8	89.0								center good	GOES 6	2,2 VIS 1	
16	8	2030	29.7	88.9								psbl center	NPA-R		
17	8	2033	29.6	89.0								center fair	MOB-R		
18	8	2035	29.4	89.9						50		center fair	SIL-R		
19	8	2102	29.6	89.1								center poor	MOB-R		
20	8	2132	29.3	89.1								center poor	MOB-R		
21	8	2135	29.6	89.1						40		center fair	SIL-R		
22	8	2201	29.3	89.1								center poor	MOB-R		
23	8	2232	29.3	89.1								center poor	MOB-R		
24	8	2233	29.6	89.1						40		center fair	SIL-R		
25	8	2301	29.3	89.1								center poor	MOB-R		
26	8	2325	29.4	89.1								center poor	MOB-R		
27	9	0000	29.5	89.1	35		1005						GOES 7	2,3 VIS 1	
28	9	0028	29.5	89.0								center poor	MOB-R		
29	9	0033	29.6	89.0								center poor	SIL-R		
30	9	0058	29.6	89.1								center poor	MOB-R		

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CENTER FIXES

TROPICAL STORM BERYL (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT.	Lon.	SFC.	FLT. LVL.							
61	9	1505	30.0	90.3					12	psbl center	BTR-R		
62	9	1525	30.2	90.7					30	psbl center	LCH-R		
63	9	1526	30.0	90.7					12	psbl center	BTR-R		
64	9	1533	27.9	90.6					10	center fair	SIL-R		
65	9	1600	30.1	90.9					30	psbl center	LCH-R		
66	9	1602	29.9	90.6					06	center fair	SIL-R		
67	9	1608	30.1	90.8					12	psbl center	BTR-R		
68	9	1625	30.1	90.0					25	psbl center	LCH-R		
69	9	1630	29.9	90.6					06	center fair	SIL-R		
70	9	1630	30.1	90.8					20	psbl center	BTR-R		
71	9	1703	29.9	90.6					05	center fair	SIL-R		
72	9	1706	30.1	90.8					06	center good	BTR-R		
73	9	1725	30.1	91.2					30	psbl center	LCH-R		
74	9	1727	30.1	90.9					10	center good	BTR-R		
75	9	1733	29.9	90.7						center fair	SIL-R		
76	9	1800	30.2	90.9							GOES 7	- ,3 VIS 1	
77	9	1800	30.1	91.3						psbl center	LCH-R		
78	9	1800	30.1	90.8						center poor	SIL-R		
79	9	1806	30.1	90.7					10	psbl center	BTR-R		
80	9	1825	30.1	91.3						psbl center	LCH-R		
81	9	1827	30.1	90.9					07	psbl center	BTR-R		
82	9	1833	30.1	90.8						center poor	SIL-R		
83	9	1901	30.1	90.8						center fair	SIL-R		
84	9	1903	30.1	90.9					07	psbl center	BTR-R		
85	9	1925	30.1	91.4						psbl center	LCH-R		
86	9	1927	30.1	91.0					07	psbl center	BTR-R		
87	9	1933	30.1	90.8						center fair	SIL-R		
88	9	2001	30.3	90.8						center fair	SIL-R		
89	9	2005	30.2	91.1						psbl center	BTR-R		
90	9	2025	30.3	91.2						psbl center	LCH-R		

04

CENTER FIXES

TROPICAL STORM BERYL (continued)

FIX NO.	DATE	TIME (GMT)	MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			SFC.	FLT. LVL.			OUT	IN					
31	9	0128	29.6	89.1						center poor	MOB-R		
32	9	0133	29.4	88.8						center poor	SIL-R		
33	9	0201	29.6	89.1						center poor	MOB-R		
34	9	0204	29.4	88.9						center poor	SIL-R		
35	9	0228	29.6	89.1						center poor	MOB-R		
36	9	0234	29.6	89.0					35	center poor	SIL-R		
37	9	0305	29.6	89.1						center poor	MOB-R		
38	9	0307	29.6	89.2						center fair	SIL-R		
39	9	0335	29.6	89.3						center poor	MOB-R		
40	9	0335	29.6	89.2					25	center fair	SIL-R		
41	9	0401	29.6	89.3						center poor	MOB-R		
42	9	0405	29.8	89.3					20	center fair	SIL-R		
43	9	0431	29.6	89.3						center poor	MOB-R		
44	9	0435	29.7	89.7					20	center poor	SIL-R		
45	9	0502	29.8	89.3						center poor	MOB-R		
46	9	0528	29.6	89.7					20	center poor	SIL-R		
47	9	0530	29.5	89.6	45	1000					GOES 7	2,3 IR 8	
48	9	0535	30.0	89.3						center poor	MOB-R		
49	9	0610	29.8	89.5						center poor	MOB-R		
50	9	0628	29.6	89.5					20	center poor	SIL-R		
51	9	0635	29.5	89.5						center poor	MOB-R		
52	9	0728	29.6	89.6					20	center fair	SIL-R		
53	9	0735	30.0	89.6						center poor	MOB-R		
54	9	0802	29.7	89.6					18	center fair	SIL-R		
55	9	0930	29.8	89.7					18	center poor	SIL-R		
56	9	1200	30.0	90.1							GOES 7	- ,3 VIS 1	
57	9	1328	30.1	90.2					30	center fair	SIL-R		
58	9	1428	30.1	90.4					30	center fair	SIL-R		
59	9	1428	30.0	90.7					10	center fair	BTR-R		
60	9	1502	30.1	90.6					30	psbl center	LCH-R		

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CENTER FIXES

TROPICAL STORM BERYL (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			IN	OUT					
91	9	2028	30.3	90.1								psbl center	BTR-R		
92	9	2033	30.3	91.0								center fair	SIL-R		
93	9	2100	30.4	91.1								center fair	SIL-R		
94	9	2108	30.4	91.1								psbl center	BTR-R		
95	9	2128	30.45	91.1								center fair	SIL-R		
96	9	2130	30.4	91.1								psbl center	BTR-R		
97	9	2206	30.5	91.2								psbl center	BTR-R		
98	9	2228	30.5	91.3								psbl center	BTR-R		
99	9	2305	30.5	91.4								psbl center	BTR-R		
100	10	0000	30.4	91.6								psbl center	BTR-R		
101	10	0003	30.3	91.4									GOES 7	- , 3 IR	8
102	10	0600	30.8	92.3									DMSF		
103	10	1200	31.2	92.6	25								GOES 7	- , 5 IR	8
104	10	1544	31.5	93.3									GOES 7	2 , 5 IR	8
105	10	1800	31.6	93.1	25								DMSF		
													GOES 7	1 , 3 VIS	1

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CENTER FIXES

TROPICAL STORM CHRIS 21-29 AUGUST 1988

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
01	21	0600	15.3	41.0									GOES 7	- ,5 IR 8	
02	21	1200	15.1	43.8	25								GOES 7	2,5 VIS 1	
03	21	1206	15.3	43.3	25								DMSP		
04	21	1800	14.3	45.7	25								GOES 7	2,5 VIS 1	
05	21	2143	16.4	46.3	25								DMSP		
06	22	0000	15.7	46.6	25								GOES 7	2,5 IR 8	
07	22	0600	14.9	49.7	25								GOES 7	2,5 IR 8	
08	22	1230	15.2	52.7	35		1005						GOES 7	2,5 VIS 1	
09	22	1328	15.8	51.7	25								DMSP		
10	22	1800	15.1	54.0	30		1009						GOES 7	2,2 VIS 1	
11	22	2122	15.4	54.8	25								DMSP		
12	23	0000	15.6	54.7	30		1009						GOES 7	2,5 IR 8	
13	23	0600	14.9	57.8	30		1009						GOES 7	2,5 IR 8	
14	23	1200	15.1	58.9	35		1005						GOES 7	2,5 VIS 1	
15	23	1308	16.6	60.7	25								DMSP		
16	23	1800	16.3	61.0	35		1005						GOES 7	2,5 VIS 1	
17	24	0000	16.7	62.2	35		1005						GOES 7	2,5 IR 8	
18	24	0600	17.1	64.5	35		1005						GOES 7	2,5 IR 8	
19	24	1200	17.0	65.2	35		1005						GOES 7	2,5 VIS 1	
20	24	1430	16.9	66.8	25								DMSP		
21	24	1800	17.7	66.5	35		1005						GOES 7	2,5 VIS 1	
22	25	0000	17.6	66.9	35		1005						GOES 7	2,5 IR 8	
23	25	0600	17.8	69.3	45		1000						GOES 7	2,5 IR 8	
24	25	1200	18.6	70.2	45		1000						GOES 7	2,3 VIS 1	
25	25	1410	18.5	71.0	25								DMSP		
26	25	1800	19.3	70.6	40		1003						GOES 7	2,5 VIS 1	
27	26	0000	19.2	72.7	35		1005						GOES 7	2,5 IR 8	
28	26	0008	19.8	72.1	25								DMSP		
29	26	0600	20.1	74.1	25								GOES 7	- ,5 IR 8	
30	26	1200	21.2	75.1	35		1005						GOES 7	2,6 VIS 1	

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CENTER FIXES

TROPICAL STORM CHRIS (continued)

FIX NO.	DATE	TIME (UTC)	MAX WIND (KT)		SFC.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			FLT.LVL.									
31	26	1350	21.3	74.5	25					DMS		
32	26	1200	22.5	75.3	35	1005				GOES 7	2,5 VIS 1	
33	26	1800	22.5	75.3	35	1005				GOES 7	2,5 VIS 1	
34	26	2356	22.5	75.0	25					DMS		
35	27	0000	22.7	76.1	35	1005				GOES 7	2,5 IR 8	
36	27	0600	23.2	77.1	35	1005				GOES 7	2,5 IR 8	
37	27	1200	24.3	77.0	45	1000				GOES 7	2,5 VIS 8	
38	27	1330	25.1	76.0	35	1005				DMS		
39	27	1800	25.5	78.8	45	1000				GOES 7	2,5 VIS 1	
40	27	2343	27.3	77.4	35	1005				DMS		
41	28	0000	26.2	79.6	35	1005				GOES 7	2,5 IR 8	
42	28	0439	29.1	80.4					psbl center	DAB-R		
43	28	0521	29.0	80.3					psbl center	DAB-R		
44	28	0556	29.0	80.3					center good	DAB-R		
45	28	0600	28.8	79.7	35	1005				GOES 7	2,2 IR 8	
46	28	0610	29.0	80.3					center good	DAB-R		
47	28	0622	29.1	80.2					center good	DAB-R		
48	28	0625	28.3	80.3	77	62	1008	23 23		AF	2/30	457M
49	28	0709	29.1	80.5					center poor	DAB-R		
50	28	0737	29.0	80.6					center poor	DAB-R		
51	28	0844	29.1	80.3					center poor	DAB-R		
52	28	0932	29.2	80.4					center poor	DAB-R		
53	28	1029	30.1	80.4					center poor	DAB-R		
54	28	1108	30.1	80.4					center poor	DAB-R		
55	28	1139	30.2	80.5					center poor	DAB-R		
56	28	1200	30.8	80.7	45	1000				GOES 7	2,3 VIS 1	
57	28	1203	30.5	80.4					center poor	DAB-R		
58	28	1231	30.5	80.5					center fair	DAB-R		
59	28	1244	30.3	80.5					center poor	DAB-R		
60	28	1304	30.4	80.4					center poor	DAB-R		

CENTER FIXES

FIX NO.	DATE	TIME (UTC)	POSITION				(MB)			EYE C=CIR E=EL.	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LONG.										
61	28	1425	31.8	80.9	60	64	1005		23	23			1/3	457M
62	28	1425	32.0	80.8						10	center fair	NOAA2 AYS-R		
63	28	1452	31.7	80.9	45						DMSR			
64	28	1530	31.8	81.1						10	center poor	CHS-R		
65	28	1600	32.2	81.0						25	center poor	CHS-R		
66	28	1630	32.3	81.1							GOES 7		- , 3 VIS 1	
67	28	1705	32.6	81.1						25	center poor	CHS-R		
68	28	1730	32.7	81.1							center poor	CHS-R		
69	28	1800	32.8	81.1						25	center poor	CHS-R		
70	28	2331	33.6	81.4							DMSR			

CENTER FIXES

HURRICANE DEBBY 1-5 SEPTEMBER 1988

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LONG.	SFC.	FLT.LVL.			OUT	IN					
01	01	0000	20.0	91.3	25								GOES 7	2,5 IR 4	
02	01	0600	20.2	92.2	25								GOES 7	2,5 IR 8	
03	01	1200	20.0	93.0	30		1009						GOES 7	2,5 IR 8	
04	01	1800	20.2	93.3	35		1005						GOES 7	2,5 VIS 1	
05	01	2251	20.7	94.3	25	24	1003		25	22			AF	10/6	457M
06	02	0000	20.3	94.6	35		1005						GOES 7	2,3 IR 4	
07	02	0600	21.0	95.6	35		1005						GOES 7	2,5 IR 8	
08	02	1106	20.8	94.7	35	35	998		23	24			AF	5/5	457M
09	02	1200	20.6	96.2	55		994						GOES 7	2,5 IR 2	
10	02	1321	20.7	96.1	25	30	997		23	25	C10	ragged	AF	3/4	457M
11	02	1435	20.4	96.6									DMSP 5		
12	02	1555	20.8	96.5	35	39	995		24	24	E15	closed	AF	3/4	457M
13	02	1800	21.0	97.0	40		987						GOES 7	2,5 VIS 1	
14	03	0023	20.5	97.6									DMSP 5	overland	

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CENTER FIXES

TROPICAL STORM ERNESTO SEPTEMBER 2-5 1988

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	FI
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
01	02	1800	31.8	61.5	30		1009						GOES 7	2,3 VIS 1	
02	03	0000	32.6	60.8	30		1009						GOES 7	2,5 IR 4	
03	03	0600	33.4	59.1	30		1009						GOES 7	2,5 IR 8	
04	03	1200	34.3	56.2	35		1005						GOES 7	2,5 VIS 1	
05	03	1235	34.8	54.5	25								DMSP 6		
06	03	1800	35.2	53.1	35		1005						GOES 7	2,5 VIS 1	
07	03	2340	35.1	49.7	25								DMSP 6		
08	04	0000	36.1	49.4	45		1000						GOES 7	1,5 IR 8	
09	04	0600	36.7	43.9	45		1000						GOES 7	2,3 IR 8	
10	04	1200	38.4	39.2	55		994						GOES 7	2,3 VIS 1	
11	04	1234	38.8	39.0	35		1005						DMSP 6		
12	04	1748	40.0	35.7	35		1005						NOAA 6		
13	04	1800	40.3	35.2	55		994						GOES 7	2,3 VIS 1	
14	04	2204	42.0	31.9	45		1000						DMSP 6		
15	04	2333	45.1	30.2	45		1000						DMSP 6		
16	05	0000	43.1	29.6	55		994						GOES 7	2,5 IR 8	

CENTER FIXES

UNNAMED TROPICAL STORM 7-9 SEPTEMBER 1988

DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
		LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
07	1200	11.8	19.4											
07	1800	12.5	20.0	25								GOES 7	- , 3 VIS 8	
08	0000	14.5	20.2	25								GOES 7	2, 3 VIS 2	
08	0600	15.1	19.6	30		1009						GOES 7	2, 5 IR 8	
08	1114	17.8	20.1	25								GOES 7	2, 5 IR 8	
08	1200	17.3	20.1	30		1009						DMSP		
08	1800	19.6	20.4	35		1005						GOES 7	2, 3 VIS 1	
08	1932	19.4	20.3	35		1005						GOES 7	2, 3 VIS 1	
09	0000	21.1	19.5	45		1000						DMSP		
09	0600	22.6	21.5	45		1000						GOES 7	2, 5 IR 8	
09	1055	23.0	22.2	25								GOES 7	2, 5 IR 8	
09	1200	23.5	22.1	45		1000						DMSP		
09	1800	24.7	22.4	30		1009						GOES 7	2, 1 VIS 1	
09	2102	24.8	22.3	25								GOES 7	2, 1 VIS 1	
												DMSP		



CENTER FIXES

HURRICANE GILBERT 8-17 SEPTEMBER

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
1	8	1800	12.0	54.0	25								GOES 7	2,5 VIS 1	
2	9	0000	11.6	54.5	25								GOES 7	2,5 IR 8	
3	9	0600	12.2	55.8	25								GOES 7	2,5 IR 8	
4	9	1200	13.7	58.9	30		1009						GOES 7	2,5 VIS 1	
5	9	1236	15.0	56.6	25								DMSP		
6	9	1800	15.2	60.8	30		1009						GOES 7	2,5 VIS 1	
7	9	2210	15.2	60.2	40	40	1003		23	23			AF	2/15	457M
8	9	2244	14.6	61.5	25								DMSP		
9	10	0000	14.5	61.3	35		1005						GOES 7	2,5 IR 8	
10	10	0403	14.7	62.8			1003		27	28			AF	5/5	457M
11	10	0600	13.9	62.1	40		1003						GOES 7	2,5 IR 8	
12	10	0958	16.2	63.9	25								DMSP		
13	10	1200	15.2	63.8	45		1000						GOES 7	2,3 VIS 1	
14	10	1358	15.5	64.9	35		1005						DMSP		
15	10	1800	15.6	65.5	55		994						GOES 7	2,3 VIS 1	
16	10	1807	15.7	65.4	55		993		23	25			AF	2/5	457M
17	10	2005	16.15	65.6	35		1005						DMSP		
18	10	2056	16.2	65.9	52		988				C20	open s	AF	2/10	457M
19	10	2346	15.9	66.7	45	55	984		23	25	C12	closed wall	AF	3/10	457M
20	11	0000	15.8	66.9	65		987						GOES 7	2,3 IR 8	
21	11	0238	16.2	67.2	55		994						DMSP		
22	11	0554	16.2	68.0		70	985	2948	10	13	E03/50/25	open nw	AF	4/4	700MB
23	11	0600	16.1	68.1	65		987						GOES 7	2,3 IR 8	
24	11	0749	16.7	68.6		79	980	2923	12	14	C30	open nw	AF	4/4	700MB
25	11	0851	16.6	68.7	55		994						DMSP		
26	11	0900	16.5	69.0	77		979						GOES 7	2,3 IR 8	
27	11	0941	16.1	68.8		55	980	2924	12	15	C30	closed wall	AF		700MB
28	11	1116	16.0	69.3	55		994						DMSP		
29	11	1125	16.1	69.4	70	103	977	2901	14	18	C20	closed wall	AF	2/2	700MB
30	11	1200	16.1	69.4	90		970						GOES 7	1,1 VIS 1	

HURRICANE GILBERT (continued)

FLX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT.	LONG.	SFC.	FLT.			IN	OUT					
31	11	1338	16.9	69.9	55		994						DMSP		
32	11	1642	16.9	70.5	90	78	971	2855	10	17	E15/65/45	closed wall	NOAA 3	3/4	700MI
33	11	1718	16.1	70.6	65		972	2853	10	15			AF	5/4	700MI
34	11	1800	16.2	70.7	90		970						GOES	1,1 VIS 1	
35	11	1836	16.2	70.8	105		970	2822	10	17	C50	comma-shaped	NOAA 3	5/5	700MI
36	11	1949	16.3	70.8	105	108	967	2810	10	17	C50	closed wall	NOAA 3	5/7	700MI
37	11	1953	16.4	70.9		85	967	2815	13	16	C40	closed wall	AF	5/10	700MI
38	11	1954	16.4	70.8	55		994						NOAA		
39	11	2219	16.6	71.4		60	966	2796	13	14	C40	closed wall	AF	5/10	700MI
40	12	0000	16.8	72.0	90		970						GOES 7	2,1 IR 8	
41	12	0001	16.9	71.6	90		970						DMSP		
42	12	0010	16.8	72.0		54	965	2782	10	15	C40	closed	AF	5/10	700MI
43	12	0219	17.1	72.5	90		970						DMSP		
44	12	0506	17.2	73.3		110	963	2773	15	17	C35	closed wall	AF	3/10	700MI
45	12	0649	17.4	73.8		60	964	2771	10	17	C35	closed wall	AF	3/10	700MI
46	12	0826	17.6	74.4		100	964	2774	11	18	E120/40/20	closed wall	AF	3/10	700MI
47	12	0840	17.7	74.6	90		970						NOAA		
48	12	1019	17.6	74.9		107	961	2767	11	17	C35	closed wall	AF	3/10	700MI
49	12	1104	17.7	75.2	90		970						DMSP		
50	12	1148	17.6	75.3	40	72	960	2765	10	19	C30	closed wall	AF	3/10	700MI
51	12	1200	17.7	75.9	102		960						GOES 7	1,1 VIS 1	
52	12	1500	17.8	76.2	115		948						GOES 7	2,1 VIS 1	
53	12	1500	17.6	76.2	115		948						DMSP		
54	12	1740	17.8	76.6		81		2792	10	17	C15	closed wall	AF	1/1	700MI
55	12	1800	18.0	76.8	115		948						GOES 7	2,1 IR 1	
56	12	2125	18.3	77.4	115		948						NOAA		
57	12	2245	18.3	78.0	65	86	962	2762					AF		700MI
58	12	2348	18.4	78.3	115		948						DMSP	overland	
59	12	2350	18.2	78.3		61	964	2781	10	16	C12	closed wall	AF	2/2	700MI
60	13	0000	18.3	78.5	115		948						GOES 7	2,1 IR 8	

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
61	13	0340	18.5	79.2	115		948		11	19	C20	closed wall	DMSP AF GOES 7	5/5 1/1 IR 8	700MB
62	13	0453	18.4	79.4		104	955	2700							
63	13	0600	18.4	79.8	127		935		14	21	C18	closed wall	AF	4/4	700MB
64	13	0613	18.5	79.8		80	949	2647	12	22	E14/20/15	closed wall	AF GOES 7	5/5 1,1 IR 8	700MB
65	13	0743	18.6	80.1		93	943	2595							
66	13	0900	18.7	80.5	127		935		15	23	C20	closed wall	AF NOAA	8/5	700MB
67	13	0912	18.7	80.5		73	938	2582							
68	13	1010	18.7	80.5	115		948								
69	13	1051	18.7	80.8	115		948		16	23	E04/15/10	closed wall	AF GOES 7	2/5 1,1 IR 8	700MB
70	13	1102	18.7	80.9		90	934	2521							
71	13	1200	18.9	81.1	140		921		12	23	C14	closed wall	AF	2/5	700MB
72	13	1233	18.8	81.2		90	932	2496	13	26	C13	closed wall	AF	2/5	700MB
73	13	1415	19.0	81.6	75	100	922	2427							
74	13	1440	19.0	81.8	140		921								
75	13	1500	19.1	81.7	140		921		12	24	C11	closed wall	AF	2/5	700MB
76	13	1537	19.1	81.9	75	70	918	2396	13	22	C08	closed wall	NOAA 3	2/3	700MB
77	13	1757	19.3	82.5	120	160	903	2302							
78	13	1800	19.4	82.4	155		906		16	25	C09	closed wall	NOAA 3	4/4	700MB
79	13	1913	19.4	82.8	100	168	900	2222	16	23	C08	closed wall	NOAA 3	3/3	700MB
80	13	2034	19.4	83.1	130	150	893	2159							
81	13	2100	19.5	83.2	155		906								
82	13	2114	19.5	83.4	140		921		14	26	C08	closed wall	NOAA 3	4/3	850MB
83	13	2152	19.5	83.3	150	162	888	2118	18	27	C08	closed wall	NOAA 3	4/4	700MB
84	13	2323	19.6	83.6	140	142	890	2135							
85	13	2336	19.6	83.8	155		921								
86	14	0000	19.7	83.8	170		890								
87	14	0300	19.8	84.6	170		890								
88	14	0320	20.0	84.8	155		921								
89	14	0600	19.9	85.4	170		890		16	24	C08	closed wall	GOES 7 NOAA 3	1,1 IR 8 2/3	700MB
90	14	0610	19.9	85.3		145	894	2170							

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LN.	SFC.	FLT. LVL.			OUT	IN					
91	14	1731	20.1	85.6		145		2160	17	24	C08	closed wall	NOAA 2	2/2	700MB
92	14	0900	20.1	86.0	170		890						GOES 7	1,1 IR 8	
93	14	0906	20.1	85.8				2140	16	24	C08	closed wall	NOAA 2	2/2	700MB
94	14	0939	20.2	86.1	155		906						NOAA 2		
95	14	1012	20.2	86.1		143	890	2136					NOAA 2		700MB
96	14	1107	20.4	86.2		132	891	2149	20	22	C08	closed wall	NOAA 3	8/3	700MB
97	14	1200	20.5	86.6	155		906						GOES 7	2,1 IR 8	
98	14	1221	20.5	86.6	155		906						DMSP		
99	14	1420	20.6	87.3	140		921						DMSP		
100	14	1800	20.9	87.8	overland								GOES 7	-,3 VIS 1	
101	14	2103	21.2	88.7	140		921						DMSP		
102	15	0000	21.5	89.4	155		906						GOES 7	2,1 IR 8	
103	15	0009	21.5	89.4		92	944	2596	14	14	C08-25	closed	AF	1/21	700MB
104	15	0105	21.4	89.5	127		935						DMSP		
105	15	0151	21.3	89.6		92	948				C12	closed	AF	1/2	700MB
106	15	0300	21.4	89.9	155		906						GOES 7	2,3 IR 8	
107	15	0301	21.4	89.9		92	947	2628	14	15	C12	closed	AF	1/2	700MB
108	15	0301	21.5	90.0	127		935						DMSP		
109	15	0435	21.5	90.3		58	949	2643	13	16		open ne-se	AF	1/2	700MB
110	15	0547	21.5	90.6		69	949	2653	12	15		open ne	AF	4/4	700MB
111	15	0600	21.5	90.7	102		960						GOES 7	2,3 IR 8	
112	15	0730	21.6	90.8		49	951	2665	15	15	C04-12	closed wall	AF	4/4	700MB
113	15	0843	21.7	91.1		76	950	2664	13	15	C08	closed wall	AF	4/3	700MB
114	15	0900	21.7	91.2	102		960						GOES 7	2,3 IR 8	
115	15	1111	21.8	91.4		67	950	2666	14	16	C10	closed wall	AF	4/4	700MB
116	15	1200	22.0	92.0	102		960						GOES 7	2,3 IR 8	
117	15	1208	21.9	91.6	127		935						DMSP		
118	15	1224	21.8	91.8	70	83	951	990	19	21	C25-80	closed wall	NOAA 3	2/3	850MB
119	15	1346	21.8	91.9	71	85		990					NOAA 3		850MB
120	15	1402	21.9	91.9	65	73	950	2670	13	15	E03/11/08	open n-ne	AF	2/4	700MB

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CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION			MIN. PRES. (MB)	MIN. 700MB HT. (M)			EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.	
			LAT.	LN.											
121	15	1500	22.1	92.2	102	960						GOES 7	2,1 IR 8		
122	15	1542	22.0	92.0	90	970						DMSP			
123	15	1607	22.2	92.5	76	88	953	1005	18	22	CO-70/20	closed wall	NOAA 3	3/3	850MB
124	15	1633	22.1	92.6	80	78	953	2687	13	15	C10	closed wall	AF	2/4	700MB
125	15	1751	22.2	92.7		85	952	2680	14	14	C15	open ne-s	AF	2/4	700MB
126	15	1800	22.4	92.8	102		960					GOES 7	2,1 VIS 1		
127	15	2004	22.1	93.1		92	948	2655	12	15	E19/15/10	open ne	AF	2/6	700MB
128	15	2100	22.5	93.3	102		960					GOES 7	2,3 VIS 1		
129	15	2234	22.5	93.3	90		970					DMSP			
130	16	0000	22.6	93.7	110		954					GOES 7	2,3 IR 8		
131	16	0028	22.5	93.8	80	97	949	976	21	24		poorly def.	NOAA 3	2/2	850MB
132	16	0053	22.6	93.9	127		935					DMSP			
133	16	0154	22.6	94.0	80	79	949	984				NOAA 3		850MB	
134	16	0300	22.8	94.3	102		960					GOES 7	2,3 IR 8		
135	16	0320	22.8	94.3	80	90	950	991	22	23	E24/55/45	open e-ne	NOAA 3	2/1	850MB
136	16	0422	22.8	94.6	127		935					DMSP			
137	16	0517	22.9	94.7	83	80	950	985	23	24	E22/50/45	open n-ne	NOAA 3	2/2	850MB
138	16	0600	23.0	94.6	102		960					GOES 7	2,1 IR 8		
139	16	0614	23.0	94.8		108	950	995	20	22	C40	closed wall	NOAA 2	1/1	850MB
140	16	0810	23.2	95.0		83	946	2619	12	16	C40	closed wall	AF	3/10	700MB
141	16	0900	23.3	95.3	102		960					GOES 7	2,2 IR 8		
142	16	0958	23.5	95.2		115	946	2615	12	16	C30	closed wall	AF	3/8	700MB
143	16	1142	23.7	95.6		70	948	2631	11	14	C30	closed wall	AF	3/8	700MB
144	16	1200	23.7	95.8	102		960					GOES 7	2,1 IR 8		
145	16	1234	23.1	95.8						50	psbl eye	ERO-R			
146	16	1213	23.6	96.0	127		935					DMSP			
147	16	1243	23.8	96.1		80	949	2640	12	15	C35	closed wall	AF		700MB
148	16	1310	23.6	96.0						45	psbl eye	ERO-R			
149	16	1336	23.6	96.1						36	psbl eye	ERO-R			
150	16	1410	23.6	96.2						36	psbl eye	ERO-R			

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE E-EL	DIA. (N.MI.)	ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN						
151	16	1415	23.7	96.2		86	948	2633	12	15	C35		closed wall	AF	3/9	700MB
152	16	1425	23.9	96.2							36		eye good	ERO-R		
153	16	1500	23.8	96.4	115		948							GOES 7	2,1 VIS 1	
154	16	1500	23.8	96.3		78	948	2639	12	16	C19		1 wall	AF	5/5	700MB
155	16	1510	23.7	96.3							40		eye good	ERO-R		
156	16	1522	23.6	96.5	102		960							DMSF		
157	16	1603	23.7	96.6							35		eye good	ERO-R		
158	16	1625	23.7	96.7							37		eye good	ERO-R		
159	16	1700	23.7	96.7							34		eye good	ERO-R		
160	16	1730	23.8	96.8							35		eye good	ERO-R		
161	16	1800	23.9	96.9							35		eye good	ERO-R		
162	16	1800	24.0	97.0	115		948							GOES 7	2,2 IR 8	
163	16	1825	23.9	97.0							32		eye good	ERO-R		
164	16	1851	24.0	97.1	100	115	954	1010	17	22	C30		closed	NOAA 2	3/2	850MB
165	16	1900	24.0	97.1							34		eye good	ERO-R		
166	16	1930	24.1	97.2							32		eye good	ERO-R		
167	16	1932	24.0	97.2		85	955	1015	17	23	C25		closed	NOAA 2	2/3	850MB
168	16	2002	24.2	93.3							30		eye good	ERO-R6		
169	16	2030	24.2	97.3							31		eye good	ERO-R		
170	16	2100	24.2	97.5							29		eye good	ERO-R		
171	16	2100	24.1	97.6	115		948							GOES 7	2,3 VIS 1	
172	16	2114	24.1	97.5		97	955	1022	21	22	C30		closed	NOAA 2	3/3	850MB
173	16	2125	24.2	97.5							28		eye good	ERO-R		
174	16	2202	24.3	97.7							22		eye good	ERO-R		
175	16	2223	24.3	97.5	101		960							NOAA		
176	16	2225	24.3	97.7							22		eye good	ERO-R		
177	16	2300	24.3	97.9							23		eye good	ERO-R		
178	16	2330	24.3	98.0							22		eye good	ERO-R		
179	17	0000	24.5	98.1	102		960							GOES 7	2,3 IR 8	
180	17	0003	24.3	98.0							22		eye good			

CENTER FIXES

HURRICANE GILBERT (continued)

	DATE	TIME (GMT)	POSITION			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LON.				OUT	IN					
181	17	0030	24.3	98.1						21	eye good	BRO-R		
182	17	0040	24.2	98.0	overland							DMSP		
183	17	0103	24.4	98.2						20	eye good	BRO-R		
184	17	0125	24.4	98.3						20	eye good	BRO-R		
185	17	0200	24.4	98.4						18	eye good	BRO-R		
186	17	0225	24.5	98.4						17	eye fair	BRO-R		
187	17	0300	24.5	98.6	overland							GOES 7	-,3 IR 4	
188	17	0308	24.5	98.5						10	eye good	BRO-R		
189	17	0403	24.8	98.6	overland							DMSP		
190	17	0600	24.7	99.0	overland							GOES 7	-,2 IR 8	
191	17	1200	25.0	100.4	overland							GOES 7	-, - IR 1	

HURRICANE HELENE 17-30 SEPTEMBER 1988

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FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN				
01	17	1200	13.0	22.7	25									
02	17	1800	12.7	23.6	25								GOES 7	2,5 VIS 1
03	18	0000	12.8	25.0	25								GOES 7	2,5 VIS 1
04	18	0600	12.5	26.2	25								GOES 7	2,5 IR 4
05	18	1119	12.3	27.7	25								GOES 7	5,2 IR 8
06	18	1200	12.1	27.0	25								D MSP 5	
07	18	1800	12.3	27.7	25								GOES 7	2,5 VIS 1
08	19	0000	12.5	28.6	25								GOES 7	2,5 VIS 1
09	19	0000	11.6	27.8	25								GOES 7	2,3 IR 8
10	19	0600	13.0	29.8	25								D MSP 6	
11	19	1059	13.3	30.1	30								GOES 7	2,3 IR 8
12	19	1200	13.3	30.7	30								D MSP 5	
13	19	1800	13.5	31.6	30		1009						GOES 7	2,3 VIS 1
14	20	0000	13.3	32.7	30		1009						GOES 7	2,5 VIS 1
15	20	0600	13.3	33.8	35		1009						GOES 7	2,5 IR 8
16	20	1200	13.0	34.7	35		1005						GOES 7	2,5 IR 8
17	20	1221	12.7	34.4	35		1005						GOES 7	2,3 VIS 1
18	20	1800	12.3	36.7	45		1005						D MSP 6	
19	20	2027	12.5	37.1	55		1000						GOES 7	2,3 VIS 1
20	21	0000	12.0	37.4	55		994						D MSP 6	
21	21	0331	12.0	37.8	77		994						GOES 7	2,5 IR 8
22	21	0600	12.1	38.5	77		979						GOES 7	2,5 IR 8
23	21	1200	11.1	39.4	77		979						GOES 7	2,5 IR 8
24	21	1201	12.0	39.3	55		979						GOES 7	2.3 VIS 1
25	21	1800	12.4	39.9	77		994						D MSP 6	
26	21	2014	12.9	40.9	55		977						GOES 7	2,1 VIS 1
27	22	0000	12.9	40.9	77		994						D MSP 6	
28	22	0600	13.0	41.7	90		977						GOES 7	1,1 IR 8
29	22	1142	13.3	42.4	65		970						GOES 7	2,5 IR 8
30	22	1200	13.1	42.2	90		987						D MSP 6	
							970						GOES 7	2,3 VIS 1



CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	A A
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
31	22	1800	13.6	43.1	102		960						GOES 7	2,3 VIS 1	
32	22	2144	13.7	43.7	65		987						DMS		
33	23	0000	13.9	44.0	115		948						GOES 7	1,1 IR 8	
34	23	0600	14.0	44.9	115		948						GOES 7	1,1 IR 8	
35	23	0847	14.4	45.1	65		987						DMS		
36	23	1200	14.6	45.5	115		948						GOES 7	2,3 VIS 1	
37	23	1303	14.6	45.9	115		948						DMS		
38	23	1800	15.4	46.2	127		935						GOES 7	2,3 VIS 1	
39	23	1923	15.5	46.2	115		948						NOAA		
40	23	2131	15.7	46.6	115		948						DMS		
41	24	0000	16.0	46.9	115		948						GOES 7	2,1 IR 8	
42	24	0144	16.2	47.2	90		970						DMS		
43	24	0600	16.6	47.7	102		960						GOES 7	1,2 IR 8	
44	24	0834	17.1	47.6	90		970						DMS		
45	24	1200	17.4	47.8	102		960						GOES 7	2,3 IR 8	
46	24	1243	17.5	48.1	102		960						DMS		
47	24	1800	18.1	48.5	102		960						GOES 7	2,3 VIS 1	
48	25	0000	18.7	48.9	102		960						GOES 7	1,1 IR 8	
49	25	0600	19.2	49.0	102		960						GOES 7	1,1 IR 8	
50	25	1200	20.0	49.0	90		970						GOES 7	2,3 VIS 1	
51	25	1224	20.1	49.2	90		970						DMS		
52	25	1800	20.9	49.1	90		970						GOES 7	2,3 VIS 1	
53	26	0000	22.1	49.6	90		970						GOES 7	2,5 IR 8	
54	26	0104	22.2	49.6	102		960						DMS		
55	26	0600	22.9	49.4	90		970						GOES 7	2,5 IR 8	
56	26	1200	24.5	49.9	77		979						GOES 7	2,3 VIS 1	
57	26	1204	24.6	50.1	77		979						DMS		
58	26	1800	26.2	50.6	77		979						GOES 7	2,3 VIS 1	
59	27	0000	27.6	51.1	77		979						GOES 7	2,5 IR 8	
60	27	0045	27.5	51.1	77		979						DMS		

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CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	A A	
			LAT.	LONG.	SFC.	FLT.LVL.			OUT	IN						
61	27	0600	28.6	52.0	77		979									
62	27	1144	29.6	52.2	77		979						GOES 7	2,3 IR 8		
63	27	1200	29.8	52.0	77		979						DMS			
64	27	1800	30.9	51.9	77		979						GOES 7	1,1 VIS 1		
65	28	0000	31.8	51.7	77		979						GOES 7	1,1 VIS 1		
66	28	0206	32.0	51.7	77		979						GOES 7	2,2 IR 4		
67	28	0600	32.6	51.1	77		979						DMS			
68	28	1124	33.1	50.3	77		979						GOES 7	2,1 IR 8		
69	28	1200	33.5	50.3	77		979						DMS			
70	28	1800	34.7	49.6	77		979						GOES 7	1,1 VIS 1		
71	29	0000	36.2	48.5	90		970						GOES 7	1,1 VIS 1		
72	29	0146	36.2	48.2	77		979						GOES 7	2,3 IR 4		
73	29	0600	37.5	47.0	90		970						DMS			
74	29	1104	39.4	44.8	77		979						GOES 7	2,5 IR 8		
75	29	1200	40.1	44.2	77		979						DMS			
76	29	1800	42.6	42.2	77		979						GOES 7	1,1 VIS 1		
77	30	0000	47.1	37.9	65		987						GOES 7	1,1 VIS 1		
78	30	0127	46.2	37.8	77		979						GOES 7	2,3 IR 4		
79	30	0600	50.1	34.3	65		987						DMS			
80	30	1200	55.0	30.0	Extratropical								GOES 7	2,5 IR 8		
													GOES 7	-5 VIS 1		

CENTER FIXES

TROPICAL STORM ISAAC 28 SEPTEMBER - 1 OCTOBER 1988

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	AC AI
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
01	28	0600	9.0	43.5									GOES 7	- ,5 IR 8	
02	28	1200	8.5	45.0									GOES 7	2,5 VIS 1	
03	28	1306	8.5	43.8	25								DMSP 6		
04	28	1800	8.7	45.7	30		1009						GOES 7	2,5 VIS 1	
05	29	0000	8.6	47.0	35		1005						GOES 7	2,5 IR 4	
06	29	0146	9.6	46.4	25								DMSP 6		
07	29	0600	8.5	48.3	35		1005						GOES 7	2,5 IR 8	
08	29	1200	9.5	50.0	35		1005						GOES 7	2,3 VIS 1	
09	29	1246	9.3	50.1	35		1005						DMSP 5		
10	29	1800	9.6	51.3	35		1005						GOES 7	2,3 VIS 1	
11	30	0000	9.8	51.7	45		1000						GOES 7	2,5 IR 4	
12	30	0127	9.8	52.4	35		1005						DMSP 6		
13	30	0600	9.3	52.5	35		1005						GOES 7	2,5 IR 8	
14	30	1200	10.6	54.6	35		1005						GOES 7	2,5 VIS 1	
15	30	1226	10.6	54.7	35		1005						DMSP 5		
16	30	1800	11.1	56.2	35		1005						GOES 7	2,5 VIS 1	
17	30	1951	11.5	56.1	25	35	1005		24	29			AF	6/5	4'
18	30	2146	11.3	56.9	35		1005						DMSP 6		
19	30	2239	11.8	56.7		50	1007		23	26			AF	7/9	4'
20	01	0000	11.7	57.0	45		1000						GOES 7	2,5 IR 8	
21	01	0107	11.6	57.2	35		1005						DMSP 6		
22	01	0600	11.0	57.8	45		1000						GOES 7	2,5 IR 8	
23	01	1031	11.9	58.2	35		1005						DMSP 5		
24	01	1200	11.1	60.3	35		1005						GOES 7	2,5 VIS 1	
25	01	1459	12.1	62.8	15	20	1007		25	24			AF	3/3	4
26	01	1701	12.1	62.8	20	18	1006		25	25			AF	3/3	4
27	01	1800	12.2	63.1	30		1009						GOES 7	2,5 VIS 1	

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HURRICANE JOAN 9-23 OCTOBER 1988

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT.	Lon.	SFC.	FLT.			LVL.	OUT					
1	09	1200	7.2	36.5	25								GOES 7	2,3 VIS 1	
2	09	1800	7.3	37.2	25								GOES 7	2,3 VIS 1	
3	10	0000	6.9	37.9	25								GOES 7	2,5 IR 8	
4	10	0600	7.7	38.2	25								GOES 7	2,5 IR 4	
5	10	1200	7.0	40.0									GOES 7	-,5 VIS 1	
6	10	1231	8.2	42.8	25								DMSP		
7	10	1800	8.9	42.2	25								GOES 7	2,3 VIS 1	
8	11	0000	9.1	43.7	30		1009						GOES 7	2,3 IR 8	
9	11	0112	9.1	43.6	25								DMSP		
10	11	0600	9.9	44.8	35		1005						GOES 7	2,5 IR 4	
11	11	1200	11.0	46.3	35		1005						GOES 7	2,3 VIS 1	
12	11	1211	10.4	46.6	35		1005						DMSP		
13	11	1800	11.2	47.8	45		1000						GOES 7	2,3 VIS 1	
14	12	0000	11.5	49.3	50								GOES 7	2,5 IR 4	
15	12	0052	11.8	48.8	45		1000						DMSP		
16	12	0600	11.6	49.7	45		1000						GOES 7	2,5 IR 4	
17	12	1200	12.3	51.1	45		1000						GOES 7	2,3 VIS 1	
18	12	1333	12.5	51.6	45		1000						DMSP		
19	12	1800	12.4	52.5	35		1005						GOES 7	2,3 VIS 1	
20	13	0000	12.6	53.8	30		1009						GOES 7	2,5 IR 4	
21	13	0032	13.2	53.7	45		1000						DMSP		
22	13	0600	12.5	55.5	35		1005						GOES 7	2,5 IR 4	
23	13	1114	12.0	55.3	20	21	1011		22	23			AF	2/8	457M
24	13	1200	12.1	55.8	45		1000						GOES 7	2,3 VIS 1	
25	13	1313	12.2	55.8	45		1000						DMSP		
26	13	1324	12.7	56.1	50	53	1006		22	24			AF	4/6	457M
27	13	1506	12.8	56.6		39	1004		24	26	C15	open s	AF	4/4	457M
28	13	1706	12.8	57.1		23	1002		25	24	C15		AF	2/4	457M
29	13	1800	12.2	56.8	45		1000						GOES 7	2,3 VIS 1	
30	13	2228	12.5	57.2	45		1000						DMSP		



CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
31	14	0000	12.7	58.3	45		1000								
32	14	0023	12.6	58.3		37	1003		19	21	C20	closed	GOES 7 AF	2,5 IR 8 4/4	850MB
33	14	0154	12.5	58.0	45		1000								
34	14	0203	12.5	58.3		35	1004						AF	4/4	850MB
35	14	0359	12.5	58.7		26	1002						AF	4/4	850MB
36	14	0550	12.4	59.0		38	1002		18	21	C20	closed	AF	4/4	850MB
37	14	0600	12.8	59.4	45		1000						GOES 7 DMSP	2,5 IR 4	
38	14	0931	12.6	59.6	45		1000								
39	14	1144	12.3	59.9	70	74	1002		22	21	C15	closed	AF	1/3	457M
40	14	1200	12.4	60.1	45		1000						GOES 7 DMSP	2,5 VIS 1	
41	14	1253	12.4	60.3	55		994								
42	14	1402	12.0	60.4	50	49	1001		22	24		poorly def.	AF	1/4	457M
43	14	1702	12.0	60.8	30	35	1000		22	23		poorly def.	AF	1/3	457M
44	14	1800	12.1	60.9	55		994						GOES 7 DMSP	2,3 VIS 1	
45	14	2036	12.4	61.0	55		994								
46	15	0000	12.2	61.4		31	1002		18	21			AF	4/4	850MB
47	15	0000	11.8	61.8	55		994						GOES 7 DMSP	2,3 IR 8	
48	15	0134	11.3	61.5	55		994								
49	15	0216	12.2	62.2		28	1006		17	19			AF	5/8	850MB
50	15	0420	12.2	62.7		16	1005		17	18			AF	5/8	850MB
51	15	0532	12.2	62.9		25	1003		20	21			AF	4/5	850MB
52	15	0600	11.8	62.9	55		994						GOES 7 DMSP	2,3 IR 8	
53	15	0918	12.5	62.9	55		994								
54	15	1200	11.7	64.2	55		994						GOES 7	2,3 VIS 1	
55	15	1228	11.9	64.2	40	43	1001		23	25	C07	open nw	AF	4/4	457M
56	15	1415	11.9	64.7	45		994						DMSP		
57	15	1415	11.8	64.5	55	36	1001						AF		457M
59	15	1551	11.9	64.7	75	60	999						AF		457M
60	15	1721	11.9	64.9	65	67	999		24	25	C12	closed	AF		457M

HURRICANE JOAN (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
			LAT.	Lon.	SFC.	FLT.	LVL.			OUT	IN					
61	15	1800	11.5	65.2	55			994								
62	15	2025	12.0	65.4	55			994						GOES 7	2,3 VIS 1	
63	15	2203	12.1	65.8	55			994						NOAA 6		
64	15	2310	12.1	65.9			35	1000	1412	18	21		poorly def.	DMSP		
65	16	0000	12.1	66.1	55			994						AF	1/3	850MB
66	16	0213	12.0	66.5			29	1002	1428	17	20		poorly def.	GOES 7	2,3 IR 8	
67	16	0255	12.1	66.7	55			994						AF	4/3	850MB
68	16	0500	12.0	66.9			32	999	1405	18	25			DMSP		
69	16	0600	12.0	67.4	55			994						AF	1/3	850MB
70	16	1048	11.9	68.1	45			1000						GOES 7	2,3 IR 8	
71	16	1148	11.8	68.2	50		50	1000						DMSP		
72	16	1200	11.8	68.3	55			994		23	25	C10	open sw	AF	2/4	457M
73	16	1355	11.9	68.6	55			994						GOES 7	2,3 VIS 1	
74	16	1355	11.9	68.7	55		64	1001		19	25	C15	closed wall	DMSP		
75	16	1540	12.0	68.9	20		18	1000		24	25	C15	open sw	AF	4/2	457M
76	16	1710	12.1	69.1	35		34	1000		24	23	C15	open w-sw	AF	4/2	457M
77	16	1800	12.0	69.2	55			994						GOES 7	2,3 VIS 1	
78	16	2014	12.2	69.7	55			994						NOAA 6		
79	16	2333	12.2	70.2	55			994						DMSP		
80	17	0000	12.2	70.5	55			994						GOES 7	2,3 IR 8	
81	17	0236	12.2	70.7	55			994						DMSP		
82	17	0318	12.0	70.9			64	995	1380	18	20	C18	closed wall	AF	2/2	850MB
83	17	0600	12.3	71.2	55			994						GOES 7	2,3 VIS 8	
84	17	1035	11.9	71.8	55			994						DMSP		
85	17	1200	12.0	72.0	55			994						GOES 7	2,3 VIS 1	
86	17	1335	12.0	72.4	35			1005						DMSP		
87	17	1714	11.8	73.0	70		65	993	1350	18	20	C20	closed wall	AF	1/1	850MB
88	17	1800	11.8	73.0	65			987						GOES 7	2,3 VIS 1	
89	17	2320	12.2	73.5	35			1005						DMSP		
90	17	2345	11.9	74.0			110	986		23	24	C20	closed wall	AF	5/4	457M

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
91	18	0000	11.9	73.9	77		979								
92	18	0110	11.8	74.2		76	984	1289	18	25	C10	closed wall	GOES 7	2,1 IR 4	
93	18	0216	12.1	74.3	77		979						AF	5/4	850MB
94	18	0302	11.8	74.6		82	986	1306	16	23	C10	closed wall	DMSP		
95	18	0510	11.7	75.1		83	988	1328	15	24	C07	closed wall	AF	3/4	850MB
96	18	0546	11.6	75.9		66	985	2977	11	16	C15	closed wall	AF	2/4	850MB
97	18	0600	12.2	74.9	77		979						AF	10/4	700MB
98	18	1023	10.9	75.9	77		979						GOES 7	2,3 IR 8	
99	18	1200	11.3	76.0	77		979						DMSP		
100	18	1457	11.1	76.1	77		979						GOES 7	2,3 VIS 1	
101	18	1800	11.1	76.4	90		970						DMSP		
102	18	2019	11.3	76.7	60	61	977	2902	08	14	C15	closed wall	GOES 7	2,2 VIS 1	
103	18	2129	11.2	76.7	90	77	977	2890	09	14	EL2/10	closed	AF	4/4	700MB
104	18	2134	11.4	76.6	77		979						AF	4/4	700MB
105	18	2308	11.3	76.9	77		979						NOAA		
106	19	0000	11.4	77.2	102		960						DMSP		
107	19	0337	11.4	77.5	90		970						GOES 7	2,2 IR 4	
108	19	0530	11.2	77.7		94	970	1147	18	22	C07	closed	DMSP		
109	19	0600	11.4	77.8	102		960						AF	1/2	850MB
110	19	0724	11.2	77.8		85	974	2804	08	14	C07	closed	GOES 7	2,2 IR 8	
111	19	1134	11.4	78.2	95	114	961	2749	11	15	C05	closed	AF	1/2	700MB
112	19	1152	11.6	78.0	90		970						AF	4/2	700MB
113	19	1200	11.5	78.2	102		960						DMSP		
114	19	1319	11.4	78.4	85	70	955	2708	14	17	E08/07/05	closed	GOES 7	1,2 VIS 1	
115	19	1437	11.5	78.6	102		960						AF	4/2	700MB
116	19	1507	11.4	78.4	120	83	954	2696	19	15	C05	closed	DMSP		
117	19	1725	11.3	78.9	110	87	956	2709	10	16	C06	closed	AF	4/2	700MB
118	19	1800	11.4	79.0	115		948						AF	3/3	700MB
119	19	1825	11.3	78.9	120	87	958	2727	10	18	C06	closed	GOES	1,2	
120	19	2123	11.3	79.3	102		960						AF	3/3	700MB
													NOAA		

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)			MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	AC AL
			LAT.	Lon.	SFC.	FLT.	LVL.			OUT	IN					
121	19	2255	11.3	79.3	102			960								
122	19	2344	11.2	79.8		80		954	2773	08	14	C08	closed	DMSP AF	3/3	700
123	20	0000	11.4	79.4	115			948						GOES 7	2,2 IR 4	
124	20	0116	11.3	79.5		77		960	2802	09	16	C08	closed	AF	4/4	700
125	20	0317	11.2	79.8	90			970						DMSP		
126	20	0600	11.1	79.8	115			948						GOES 7	2,3 IR 8	
127	20	0605	11.1	79.7		77		966	2797	09	15	C15	closed	AF	5/3	700
128	20	0710	11.1	79.6		62		969	2820	09	13	C15	closed	AF	5/3	700
129	20	0847	11.2	79.7		76		968	2800	08	13	C10	closed	AF	5/4	700
130	20	1008	11.1	79.4	90			970						NOAA		
131	20	1100	11.1	79.5				968	2803	12	15	C09	closed	AF	5/4	700
132	20	1140	11.0	79.8	90			970						DMSP		
133	20	1200	11.3	79.7	102			960						GOES	1,2 VIS 1	
134	20	1240	11.1	79.6				970	2828	11	14	C07	closed	AF	5/3	700
135	20	1417	11.2	79.7	102			960						DMSP		
136	20	1734	11.3	79.9		65		972	2836	12	14	C10	closed	AF	4/4	700
137	20	1800	11.4	79.9	102			960						GOES 7	2,1 VIS 1	
138	20	1931	11.4	79.9	40	62		973	2842	11	13	C10	closed	AF		700
139	20	2114	11.5	80.0	55	70		969	2809	11	13	C10	closed	AF		700
140	21	0000	11.7	80.3	90			970						GOES 7	2,1 IR 4	
141	21	0018	11.5	80.3		58		970	2821	11	15	C08	closed	AF	3/2	700
142	21	0025	11.5	80.3	102			960						DMSP		
143	21	0203	11.5	80.4		62			2829	12	13	C10	closed	AF	3/3	700
144	21	0258	11.5	80.5	90			970						DMSP		
145	21	0542	11.5	80.8		77			2823	10	12	C08	closed	AF		700
146	21	0600	11.6	80.8	90			970						GOES 7	2,3 IR 8	
147	21	0657	11.6	80.9		70		970	2817	12	13	C10	closed	AF	3/3	700
148	21	0821	11.6	81.0		70		969	2818	11	15	C10	closed	AFT	3/3	700
149	21	0957	11.5	80.9	90			970						NOAA		
150	21	1036	11.6	81.2		91		965	2809	11	15	C20	closed	AF	5/4	700

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR. DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	AC AI
			LAT.	ION.	SFC.	FLT. LVL.			OUT	IN					
151	21	1127	11.6	81.2	90		970						DMSP		
152	21	1200	11.6	81.0	115		948						GOES 7	2,1 VIS 1	
153	21	1203	11.6	81.2	100	82	951	2648	11	13	C20	closed	AF	5/4	700
154	21	1357	11.5	81.3	115		948						DMSP		
155	21	1359	11.6	81.3	95	89	955	2721	12	16	C20	closed	AF	5/4	700
156	21	1719	11.7	81.7	85	107	958	1041	19	21	C16	closed	NOAA 3	3/2	850
157	21	1800	11.7	81.8	115		948						GOES 7	2,1 VIS 1	
158	21	1822	11.7	81.8	90	105	951	972	15	23	C16	closed	NOAA 3	4/5	850
159	21	1927	11.8	81.9	70	110	947	937	20	25	C13		NOAA 3	2/2	850
160	21	2212	11.9	82.2	95	108	941	2591	13	20	C20	closed	AF	2/4	700
161	21	2328	11.8	82.4		102	938	2566	14	21	C17	closed	AF	2/3	700
162	22	0000	11.9	82.7	140		921						GOES 7	2,1 IR 4	
163	22	0012	11.7	82.5	115		948						DMSP		
164	22	0055	11.9	82.7			936				Radar fix	5 mi. to cntr	AF	2/2	700
165	22	0238	11.9	82.8	127		935						DMSP		
166	22	0530	11.8	83.2							Radar fix C20	closed	AF		700
167	22	0600	12.0	83.3	140		921						GOES 7	2,3 IR 4	
168	22	0633	11.6	83.1							Radar fix C15		AF		700
169	22	0946	11.8	83.5	127		935						NOAA		
170	22	1115	11.8	83.8	127		935						DMSP		
171	22	1200	11.9	83.9							Over land		GOES 7	VIS 1	
172	22	1800	12.0	85.0							Over land		GOES 7	VIS 1	



CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LONG.	SFC.	FLT.LVL.			OUT	IN					
31	22	1800	13.6	43.1	102		960						GOES 7	2,3 VIS 1	
32	22	2144	13.7	43.7	65		987						DMSP		
33	23	0000	13.9	44.0	115		948						GOES 7	1,1 IR 8	
34	23	0600	14.0	44.9	115		948						GOES 7	1,1 IR 8	
35	23	0847	14.4	45.1	65		987						DMSP		
36	23	1200	14.6	45.5	115		948						GOES 7	2,3 VIS 1	
37	23	1303	14.6	45.9	115		948						DMSP		
38	23	1800	15.4	46.2	127		935						GOES 7	2,3 VIS 1	
39	23	1923	15.5	46.2	115		948						NOAA		
40	23	2131	15.7	46.6	115		948						DMSP		
41	24	0000	16.0	46.9	115		948						GOES 7	2,1 IR 8	
42	24	0144	16.2	47.2	90		970						DMSP		
43	24	0600	16.6	47.7	102		960						GOES 7	1,2 IR 8	
44	24	0834	17.1	47.6	90		970						DMSP		
45	24	1200	17.4	47.8	102		960						GOES 7	2,3 IR 8	
46	24	1243	17.5	48.1	102		960						DMSP		
47	24	1800	18.1	48.5	102		960						GOES 7	2,3 VIS 1	
48	25	0000	18.7	48.9	102		960						GOES 7	1,1 IR 8	
49	25	0600	19.2	49.0	102		960						GOES 7	1,1 IR 8	
50	25	1200	20.0	49.0	90		970						GOES 7	2,3 VIS 1	
51	25	1224	20.1	49.2	90		970						DMSP		
52	25	1800	20.9	49.1	90		970						GOES 7	2,3 VIS 1	
53	26	0000	22.1	49.6	90		970						GOES 7	2,5 IR 8	
54	26	0104	22.2	49.6	102		960						DMSP		
55	26	0600	22.9	49.4	90		970						GOES 7	2,5 IR 8	
56	26	1200	24.5	49.9	77		979						GOES 7	2,3 VIS 1	
57	26	1204	24.6	50.1	77		979						DMSP		
58	26	1800	26.2	50.6	77		979						GOES 7	2,3 VIS 1	
59	27	0000	27.6	51.1	77		979						GOES 7	2,5 IR 8	
60	27	0045	27.5	51.1	77		979						DMSP		

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CENTER FIXES

HURRICANE JOAN (CONTINUED)

FTX NO.	DATE	TIME (GMT)	LAT.	LON.	MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT ALT.
					SFC.	FLP. LVL.			OUT	IN					
14	0000		12.7	58.3	45		1000								
14	0023		12.6	58.3		37	1003		19	21	C20	closed	GOES 7 AF	2,5 IR 8 4/4	850MB
14	0154		12.5	58.0	45		1000						DMSP		
14	0203		12.5	58.3		35	1004						AF	4/4	850MB
14	0359		12.5	58.7		26	1002						AF	4/4	850MB
14	0550		12.4	59.0		38	1002		18	21	C20	closed	AF	4/4	850MB
14	0600		12.8	59.4	45		1000						GOES 7	2,5 IR 4	
14	0931		12.6	59.6	45		1000						DMSP		
14	1144		12.3	59.9	70	74	1002		22	21	C15	closed	AF	1/3	457M
14	1200		12.4	60.1	45		1000						GOES 7	2,5 VIS 1	
14	1253		12.4	60.3	55		994						DMSP		
14	1402		12.0	60.4	50	49	1001		22	24		poorly def.	AF	1/4	457M
14	1702		12.0	60.8	30	35	1000		22	23		poorly def.	AF	1/3	457M
14	1800		12.1	60.9	55		994						GOES 7	2,3 VIS 1	
14	2036		12.4	61.0	55		994						DMSP		
15	0000		12.2	61.4		31	1002		18	21			AF	4/4	850MB
15	0000		11.8	61.8	55		994						GOES 7	2,3 IR 8	
15	0134		11.3	61.5	55		994						DMSP		
15	0216		12.2	62.2		28	1006		17	19			AF	5/8	850MB
15	0420		12.2	62.7		16	1005		17	18			AF	5/8	850MB
15	0532		12.2	62.9		25	1003		20	21			AF	4/5	850MB
15	0600		11.8	62.9	55		994						GOES 7	2,3 IR 8	
15	0918		12.5	62.9	55		994						DMSP		
15	1200		11.7	64.2	55		994						GOES 7	2,3 VIS 1	
15	1228		11.9	64.2	40	43	1001		23	25	C07	open nw	AF	4/4	457M
15	1415		11.9	64.7	45		994						DMSP		
15	1415		11.8	64.5	55	36	1001						AF		457M
15	1551		11.9	64.7	75	60	999						AF		457M
15	1721		11.9	64.9	65	67	999		24	25	C12	closed	AF		457M

CENTER FIXES

HURRICANE GILBERT (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			IN	OUT					
31	11	1338	16.9	69.9	55		994						DMSP		
32	11	1642	16.9	70.5	90	78	971	2855	10	17	EL5/65/45	closed wall	NOAA 3	3/4	700MB
33	11	1718	16.1	70.6	65		972	2853	10	15			AF	5/4	700MB
34	11	1800	16.2	70.7	90		970						GOES	1,1 VIS 1	
35	11	1836	16.2	70.8	105		970	2822	10	17	C50	comma-shaped	NOAA 3	5/5	700MB
36	11	1949	16.3	70.8	105	108	967	2810	10	17	C50	closed wall	NOAA 3	5/7	700MB
37	11	1953	16.4	70.9		85	967	2815	13	16	C40	closed wall	AF	5/10	700MB
38	11	1954	16.4	70.8	55		994						NOAA		
39	11	2219	16.6	71.4		60	966	2796	13	14	C40	closed wall	AF	5/10	700MB
40	12	0000	16.8	72.0	90		970						GOES 7	2,1 IR 8	
41	12	0001	16.9	71.6	90		970						DMSP		
42	12	0010	16.8	72.0		54	965	2782	10	15	C40	closed	AF	5/10	700MB
43	12	0219	17.1	72.5	90		970						DMSP		
44	12	0506	17.2	73.3		110	963	2773	15	17	C35	closed wall	AF	3/10	700MB
45	12	0649	17.4	73.8		60	964	2771	10	17	C35	closed wall	AF	3/10	700MB
46	12	0826	17.6	74.4		100	964	2774	11	18	EL20/40/20	closed wall	AF	3/10	700MB
47	12	0840	17.7	74.6	90		970						NOAA		
48	12	1019	17.6	74.9		107	961	2767	11	17	C35	closed wall	AF	3/10	700MB
49	12	1104	17.7	75.2	90		970						DMSP		
50	12	1148	17.6	75.3	40	72	960	2765	10	19	C30	closed wall	AF	3/10	700MB
51	12	1200	17.7	75.9	102		960						GOES 7	1,1 VIS 1	
52	12	1500	17.8	76.2	115		948						GOES 7	2,1 VIS 1	
53	12	1500	17.6	76.2	115		948						DMSP		
54	12	1740	17.8	76.6		81		2792	10	17	C15	closed wall	AF	1/1	700MB
55	12	1800	18.0	76.8	115		948						GOES 7	2,1 IR 1	
56	12	2125	18.3	77.4	115		948						NOAA		
57	12	2245	18.3	78.0	65	86	962	2762					AF		700MB
58	12	2348	18.4	78.3	115		948						DMSP	overland	
59	12	2350	18.2	78.3		61	964	2781	10	16	C12	closed wall	AF	2/2	700MB
60	13	0000	18.3	78.5	115		948						GOES 7	2,1 IR 8	

CENTER FIXES

HURRICANE HELENE (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTERISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LN.	SFC.	FLT.LVL.			OUT	IN					
61	27	0600	28.6	52.0	77		979						GOES 7	2,3 IR 8	
62	27	1144	29.6	52.2	77		979						DMSP		
63	27	1200	29.8	52.0	77		979						GOES 7	1,1 VIS 1	
64	27	1800	30.9	51.9	77		979						GOES 7	1,1 VIS 1	
65	28	0000	31.8	51.7	77		979						GOES 7	2,2 IR 4	
66	28	0206	32.0	51.7	77		979						DMSP		
67	28	0600	32.6	51.1	77		979						GOES 7	2,1 IR 8	
68	28	1124	33.1	50.3	77		979						DMSP		
69	28	1200	33.5	50.3	77		979						GOES 7	1,1 VIS 1	
70	28	1800	34.7	49.6	77		979						GOES 7	1,1 VIS 1	
71	29	0000	36.2	48.5	90		970						GOES 7	2,3 IR 4	
72	29	0146	36.2	48.2	77		979						DMSP		
73	29	0600	37.5	47.0	90		970						GOES 7	2,5 IR 8	
74	29	1104	39.4	44.8	77		979						DMSP		
75	29	1200	40.1	44.2	77		979						GOES 7	1,1 VIS 1	
76	29	1800	42.6	42.2	77		979						GOES 7	1,1 VIS 1	
77	30	0000	47.1	37.9	65		987						GOES 7	2,3 IR 4	
78	30	0127	46.2	37.8	77		979						DMSP		
79	30	0600	50.1	34.3	65		987						GOES 7	2,5 IR 8	
80	30	1200	55.0	30.0	Extratropical								GOES 7	-,5 VIS 1	

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CENTER FIXES

TROPICAL STORM ISAAC 28 SEPTEMBER - 1 OCTOBER 1988

FIX	DATE	TIME (UTC)	POSITION		MAX SFC.	MIN. PRES. (MB)	MIN. 700MB	TEMP. C		EYE E=ELIP. (N.MI.)	C=CIR.DIA. C=CIR.DIA.	PER- ISTICS	OBS. UNIT	RESOLUTION
			LAT.	LONG.				FLY.LVL.	OUT					
01	28		9.0	43.5									GOES 7	- ,5 IR 8
02	28		8.5	45.0									GOES 7	2,5 VIS 1
03	28		8.5	43.8	25								DMSP 6	
04	28		8.7	45.7	30	1009							GOES 7	2,5 VIS 1
05	29		8.6	47.0	35	1005							GOES 7	2,5 IR 4
06	29		9.6	46.4	25								DMSP 6	
07	29		8.5	48.3	35	1005							GOES 7	2,5 IR 8
08	29		9.5	50.0	35	1005							GOES 7	2,3 VIS 1
09	29		9.3	50.1	35	1005							DMSP 5	
10	29		9.6	51.3	35	1005							GOES 7	2,3 VIS 1
11	30		9.8	51.7	45	1000							GOES 7	2,5 IR 4
12	30		9.8	52.4	35	1005							DMSP 6	
13	30		9.3	52.5	35	1005							GOES 7	2,5 IR 8
14	30		10.6	54.6	35	1005							GOES 7	2,5 VIS 1
15	30		10.6	54.7	35	1005							DMSP 5	
16	30		11.1	56.2	35	1005							GOES 7	2,5 VIS 1
17	30		11.5	56.1	25	1005	35	24	29				AF	6/5 457M
18	30		11.3	56.9	35	1005							DMSP 6	
19	30		11.8	56.7		1007	50	23	26				AF	7/9 457M
20	01		11.7	57.0	45	1000							GOES 7	2,5 IR 8
21	01		11.6	57.2	35	1005							DMSP 6	
22	01		11.0	57.8	45	1000							GOES 7	2,5 IR 8
23	01		11.9	58.2	35	1005							DMSP 5	
24	01		11.1	60.3	35	1005							GOES 7	2,5 VIS 1
25	01		12.1	62.8	15	1007	20	25	24				AF	3/3 457M
26	01		12.1	62.8	20	1006	18	25	25				AF	3/3 457M
27	01		12.2	63.1	30	1009							GOES 7	2,5 VIS 1

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CENTER FIXES

HURRICANE JOAN 9-23 OCTOBER 1988

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LN.	SFC.	FLT. LVL.			OUT	IN					
1	09	1200	7.2	36.5	25								GOES 7	2,3 VIS 1	
2	09	1800	7.3	37.2	25								GOES 7	2,3 VIS 1	
3	10	0000	6.9	37.9	25								GOES 7	2,5 IR 8	
4	10	0600	7.7	38.2	25								GOES 7	2,5 IR 4	
5	10	1200	7.0	40.0									GOES 7	-,5 VIS 1	
6	10	1231	8.2	42.8	25								DMSP		
7	10	1800	8.9	42.2	25								GOES 7	2,3 VIS 1	
8	11	0000	9.1	43.7	30		1009						GOES 7	2,3 IR 8	
9	11	0112	9.1	43.6	25								DMSP		
10	11	0600	9.9	44.8	35		1005						GOES 7	2,5 IR 4	
11	11	1200	11.0	46.3	35		1005						GOES 7	2,3 VIS 1	
12	11	1211	10.4	46.6	35		1005						DMSP		
13	11	1800	11.2	47.8	45		1000						GOES 7	2,3 VIS 1	
14	12	0000	11.5	49.3	50								GOES 7	2,5 IR 4	
15	12	0052	11.8	48.8	45		1000						DMSP		
16	12	0600	11.6	49.7	45		1000						GOES 7	2,5 IR 4	
17	12	1200	12.3	51.1	45		1000						GOES 7	2,3 VIS 1	
18	12	1333	12.5	51.6	45		1000						DMSP		
19	12	1800	12.4	52.5	35		1005						GOES 7	2,3 VIS 1	
20	13	0000	12.6	53.8	30		1009						GOES 7	2,5 IR 4	
21	13	0032	13.2	53.7	45		1000						DMSP		
22	13	0600	12.5	55.5	35		1005						GOES 7	2,5 IR 4	
23	13	1114	12.0	55.3	20	21	1011	22	23				AF	2/8	457M
24	13	1200	12.1	55.8	45		1000						GOES 7	2,3 VIS 1	
25	13	1313	12.2	55.8	45		1000						DMSP		
26	13	1324	12.7	56.1	50	53	1006	22	24				AF	4/6	457M
27	13	1506	12.8	56.6		39	1004	24	26	C15		open s	AF	4/4	457M
28	13	1706	12.8	57.1		23	1002	25	24	C15			AF	2/4	457M
29	13	1800	12.2	56.8	45		1000						GOES 7	2,3 VIS 1	
30	13	2228	12.5	57.2	45		1000						DMSP		

CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	FT
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
91	18	0000	11.9	73.9	77		979						GOES 7	2,1 IR 4	
92	18	0110	11.8	74.2		76	984	1289	18	25	C10	closed wall	AF	5/4	850MB
93	18	0216	12.1	74.3	77		979						DMSP		
94	18	0302	11.8	74.6		82	986	1306	16	23	C10	closed wall	AF	3/4	850MB
95	18	0510	11.7	75.1		83	988	1328	15	24	C07	closed wall	AF	2/4	850MB
96	18	0546	11.6	75.9		66	985	2977	11	16	C15	closed wall	AF	10/4	700MB
97	18	0600	12.2	74.9	77		979						GOES 7	2,3 IR 8	
98	18	1023	10.9	75.9	77		979						DMSP		
99	18	1200	11.3	76.0	77		979						GOES 7	2,3 VIS 1	
100	18	1457	11.1	76.1	77		979						DMSP		
101	18	1800	11.1	76.4	90		970						GOES 7	2,2 VIS 1	
102	18	2019	11.3	76.7	60	61	977	2902	08	14	C15	closed wall	AF	4/4	700MB
103	18	2129	11.2	76.7	90	77	977	2890	09	14	E12/10	closed	AF	4/4	700MB
104	18	2134	11.4	76.6	77		979						NOAA		
105	18	2308	11.3	76.9	77		979						DMSP		
106	19	0000	11.4	77.2	102		960						GOES 7	2,2 IR 4	
107	19	0337	11.4	77.5	90		970						DMSP		
108	19	0530	11.2	77.7		94	970	1147	18	22	C07	closed	AF	1/2	850MB
109	19	0600	11.4	77.8	102		960						GOES 7	2,2 IR 8	
110	19	0724	11.2	77.8		85	974	2804	08	14	C07	closed	AF	1/2	700MB
111	19	1134	11.4	78.2	95	114	961	2749	11	15	C05	closed	AF	4/2	700MB
112	19	1152	11.6	78.0	90		970						DMSP		
113	19	1200	11.5	78.2	102		960						GOES 7	1,2 VIS 1	
114	19	1319	11.4	78.4	85	70	955	2708	14	17	E08/07/05	closed	AF	4/2	700MB
115	19	1437	11.5	78.6	102		960						DMSP		
116	19	1507	11.4	78.4	120	83	954	2696	19	15	C05	closed	AF	4/2	700MB
117	19	1725	11.3	78.9	110	87	956	2709	10	16	C06	closed	AF	3/3	700MB
118	19	1800	11.4	79.0	115		948						GOES	1,2	
119	19	1825	11.3	78.9	120	87	958	2727	10	18	C06	closed	AF	3/3	700MB
120	19	2123	11.3	79.3	102		960						NOAA		

CENTER FIXES

HURRICANE HELENE 17-30 SEPTEMBER 1988

FIX	DATE	TIME (UTC)	POSIT		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP.		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARAC. FR-	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	LONG.	SFC.	FLT.			OUT	IN					
01	17		13.0	22.7	25								GOES	2,5 VIS 1	
02	17		12.7	23.6	25								GOES	2,5 VIS 1	
03	18		12.8	25.0	25								GOES	2,5 IR 4	
04	18		12.5	26.2	25								GOES	5,2 IR 8	
05	18		12.3	27.7	25								DMSP		
06	18		12.1	27.0	25								GOES	2,5 VIS 1	
07	18		12.3	27.7	25								GOES	2,5 VIS 1	
08	19		12.5	28.6	25								GOES	2,3 IR 8	
09	19		11.6	27.8	25								DMSP		
10	19		13.0	29.8	25								GOES	2,3 IR 8	
11	19		13.3	30.1	30								DMSP		
12	19		13.3	30.7	30		1009						GOES	2,3 VIS 1	
13	19		13.5	31.6	30		1009						GOES	2,5 VIS 1	
14	20		13.3	32.7	30		1009						GOES	2,5 IR 8	
15	20		13.3	33.8	35		1005						GOES	2,5 IR 8	
16	20		13.0	34.7	35		1005						GOES	2,3 VIS 1	
17	20		12.7	34.4	35		1005						DMSP		
18	20		12.3	36.7	45		1000						GOES	2,3 VIS 1	
19	20		12.5	37.1	55		994						DMSP		
20	21		12.0	37.4	55		994						GOES	2,5 IR 8	
21	21		12.0	37.8	77		979						GOES	2,5 IR 8	
22	21		12.1	38.5	77		979						GOES	2,5 IR 8	
23	21		11.1	39.4	77		979						GOES	2.3 VIS 1	
24	21		12.0	39.3	55		994						DMSP		
25	21		12.4	39.9	77		977						GOES	2,1 VIS 1	
26	21		12.9	40.9	55		994						DMSP		
27	22		12.9	40.9	77		977						GOES	1,1 IR 8	
28	22		13.0	41.7	90		970						GOES	2,5 IR 8	
29	22		13.3	42.4	65		987						DMSP		
30	22		13.1	42.2	90		970						GOES	2,3 VIS 1	

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CENTER FIXES

HURRICANE JOAN (CONTINUED)

FIX	DATE	TIME (GMT)	POSITION		MAX WIND (KT) . LVL.	MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	ION.				OUT	IN					
	19	2255	11.3	79.3	102	960								
	19	2344	11.2	79.8		954	2773	08	14	C08	closed	DMSP AF	3/3	700MB
	20	0000	11.4	79.4	115	948						GOES 7	2,2 IR 4	
	20	0116	11.3	79.5		960	2802	09	16	C08	closed	AF	4/4	700MB
	20	0317	11.2	79.8	90	970						DMSP		
	20	0600	11.1	79.8	115	948						GOES 7	2,3 IR 8	
	20	0605	11.1	79.7		966	2797	09	15	C15	closed	AF	5/3	700MB
	20	0710	11.1	79.6		969	2820	09	13	C15	closed	AF	5/3	700MB
	20	0847	11.2	79.7		968	2800	08	13	C10	closed	AF	5/4	700MB
	20	1008	11.1	79.4	90	970						NOAA		
	20	1100	11.1	79.5		968	2803	12	15	C09	closed	AF	5/4	700MB
	20	1140	11.0	79.8	90	970						DMSP		
	20	1200	11.3	79.7	102	960						GOES	1,2 VIS 1	
	20	1240	11.1	79.6		970	2828	11	14	C07	closed	AF	5/3	700MB
	20	1417	11.2	79.7	102	960						DMSP		
	20	1734	11.3	79.9		972	2836	12	14	C10	closed	AF	4/4	700MB
	20	1800	11.4	79.9	102	960						GOES 7	2,1 VIS 1	
	20	1931	11.4	79.9	40	973	2842	11	13	C10	closed	AF		700MB
	20	2114	11.5	80.0	55	969	2809	11	13	C10	closed	AF		700MB
	21	0000	11.7	80.3	90	970						GOES 7	2,1 IR 4	
	21	0018	11.5	80.3		970	2821	11	15	C08	closed	AF	3/2	700MB
	21	0025	11.5	80.3	102	960						DMSP		
	21	0203	11.5	80.4			2829	12	13	C10	closed	AF	3/3	700MB
	21	0258	11.5	80.5	90	970						DMSP		
	21	0542	11.5	80.8			2823	10	12	C08	closed	AF		700MB
	21	0600	11.6	80.8	90	970						GOES 7	2,3 IR 8	
	21	0657	11.6	80.9		970	2817	12	13	C10	closed	AF	3/3	700MB
	21	0821	11.6	81.0		969	2818	11	15	C10	closed	AFT	3/3	700MB
	21	0957	11.5	80.9	90	970						NOAA		
	21	1036	11.6	81.2		965	2809	11	15	C20	closed	AF	5/4	700MB

CENTER FIXES

TROPICAL STORM KEITH (continued)

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
31	21	1800	22.5	87.3	55		994								
32	21	1925	22.6	87.2	40	55	990		22	22			GOES 7	2,3 VIS 1	
33	21	2125	22.9	87.2	40	75	990		16	19			AF	4/4	
34	21	2349	23.0	87.0	55	51	993	1343	16	19			AF	6/9	
35	22	0000	23.5	87.3	55		994						AF	4/5	
36	22	0154	23.3	86.8		63	994	1359					GOES 7	2,3 IR 8	
37	22	0330	23.7	87.0		57	995	1358	17	19			AF	4/5	850ME
38	22	0413	24.1	87.3	35		1005						DMSP		850MB
39	22	0556	23.8	86.8		50	995	1362	19	20			AF	4/50	850MB
40	22	0600	24.2	86.8	55		994						GOES 7	2,5 IR 8	
41	22	1200	24.4	86.1	55		994						GOES 7	2,5 VIS 1	
42	22	1512	24.8	85.3	45		1000						DMSP		
43	22	1635	25.2	85.4	60	73	992		22	23			NOAA 3	2/3	457M
44	22	1800	25.5	85.0	45		1000						GOES 7	2,3 VIS 1	
45	22	1800	25.5	85.1	55	58	997		21	24			NOAA 3	3/3	457M
46	22	1924	25.8	84.8	45	50	992						NOAA 3		457M
47	22	2013	26.0	84.6	60	55	993		20	23			AF	5/8	457M
48	22	2300	26.7	84.3	55	75	994		22	24			AF	5/8	457M
49	23	0000	26.6	84.2	45		1000						GOES 7	2,3 IR 8	
50	23	0014	26.3	84.2								center poor	TBW-R		
51	23	0034	26.4	84.3								center poor	TBW-R		
52	23	0141	26.4	83.5								center poor	TBW-R		
53	23	0200	27.2	83.9		46	994		20	20			AF	8/15	850MB
54	23	0244	27.1	83.4								center fair	TBW-R		
55	23	0309	27.0	83.6								center poor	TBW-R		
56	23	0333	27.0	83.6								center poor	TBW-R		
57	23	0526	27.3	83.0		69	996		19	20			AF	3/8	850MB
58	23	0600	26.6	82.8	45		1000						GOES 7	2,3 IR 8	
59	23	0653	27.2	83.7		73	994		22	23			AF	3/9	
60	23	1200	27.9	81.3									GOES 7	-,3 IR 4	



CENTER FIXES

HURRICANE JOAN (CONTINUED)

DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
		LAT.	LONG.	SFC.	FLT. LVL.			OUT	IN					
21	1127	11.6	81.2	90		970						DMS		
21	1200	11.6	81.0	115		948						GOES 7	2,1 VIS 1	
21	1203	11.6	81.2	100	82	951	2648	11	13	C20	closed	AF	5/4	700MB
21	1357	11.5	81.3	115		948						DMS		
21	1359	11.6	81.3	95	89	955	2721	12	16	C20	closed	AF	5/4	700MB
21	1719	11.7	81.7	85	107	958	1041	19	21	C16	closed	NOAA 3	3/2	850MB
21	1800	11.7	81.8	115		948						GOES 7	2,1 VIS 1	
21	1822	11.7	81.8	90	105	951	972	15	23	C16	closed	NOAA 3	4/5	850MB
21	1927	11.8	81.9	70	110	947	937	20	25	C13		NOAA 3	2/2	850MB
21	2212	11.9	82.2	95	108	941	2591	13	20	C20	closed	AF	2/4	700MB
21	2328	11.8	82.4		102	938	2566	14	21	C17	closed	AF	2/3	700MB
22	0000	11.9	82.7	140		921						GOES 7	2,1 IR 4	
22	0012	11.7	82.5	115		948						DMS		
22	0055	11.9	82.7			936				Radar fix	5 mi.to cntr	AF	2/2	700MB
22	0238	11.9	82.8	127		935						DMS		
22	0530	11.8	83.2							Radar fix C20	closed	AF		700MB
22	0600	12.0	83.3	140		921						GOES 7	2,3 IR 4	
22	0633	11.6	83.1							Radar fix C15		AF		700MB
22	0946	11.8	83.5	127		935						NOAA		
22	1115	11.8	83.8	127		935						DMS		
22	1200	11.9	83.9							Over land		GOES 7	VIS 1	
22	1800	12.0	85.0							Over land		GOES 7	VIS 1	

CENTER FIXES

TROPICAL STORM KEITH 17-24 NOVEMBER 1988

FIX NO.	DATE	TIME (GMT)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT. LVL.			OUT	IN					
1	17	1300	14.3	74.0	25								GOES 7	2,5 VIS 4	
2	17	1800	14.9	74.3	25								GOES 7	2,5 VIS 4	
3	18	0000	15.3	74.3	25								GOES 7	2,5 IR 8	
4	18	0600	15.3	74.7	25								GOES 7	2,5 IR 8	
5	18	1200	14.0	78.5	25								GOES 7	2,5 VIS 4	
6	18	1800	14.8	78.8	25								GOES 7	2,3 VIS 4	
7	19	0000	15.1	79.3	25								GOES 7	2,3 IR 8	
8	19	0600	15.4	80.4	25								GOES 7	2,3 IR 8	
9	19	1200	15.2	81.1	30		1009						GOES 7	2,5 IR 4	
10	19	1430	15.5	81.4	25								DMSP		
11	19	1800	15.0	81.7	30		1009						GOES 7	2,3 VIS 4	
12	19	2142	15.6	82.1	20	26	1005		23	24			AF	4/11	457M
13	20	0000	15.8	82.6	35		1005						GOES 7	2,5 IR 8	
14	20	0311	16.2	83.4	35		1005						DMSP		
15	20	0600	16.2	83.4	35		1005						GOES 7	2,5 IR 8	
16	20	1200	18.2	84.8	45		1000						GOES 7	2,5 IR 8	
17	20	1410	18.3	84.7	35		1005						DMSP		
18	20	1752	19.0	85.3	45	55	997		24	25	E06/25/10		AF	3/2	457M
19	20	1800	19.2	85.5	55		994						GOES 7	2,5 VIS 1	
20	20	2010	19.5	85.6	45	55	996		24	27			AF		457M
21	20	2306	19.6	85.9	50	49	989	1316	24	27			AF		850MB
22	21	0000	20.0	86.3	55		994						GOES 7	2,5 IR 8	
23	21	0251	20.4	86.3	55		994						DMSP		
24	21	0600	20.4	87.2	55		994						GOES 7	2,5 IR 8	
25	21	0625	20.8	86.7		56	993	1349	15	24			AF	5/2	850MB
26	21	0830	20.9	86.6		48	995	1365	16	21			AF	5/4	850MB
27	21	1118	21.7	86.9		54	993	1351	14	20			AF	5/4	850MB
28	21	1200	22.0	86.8	55		994						GOES 7	2,3 IR 8	
29	21	1532	21.9	87.5	35		1005						DMSP		
30	21	1705	22.3	87.2	50	50	990		21	25			AF	4/8	457M

CENTER FIXES

TROPICAL STORM KEITH (continued)

FIX NO.	DATE	TIME (UTC)	POSITION		MAX WIND (KT)		MIN. PRES. (MB)	MIN. 700MB HT. (M)	TEMP. C		EYE C=CIR.DIA. E=ELIP. (N.MI.)	CHARACTER- ISTICS	OBS. UNIT	RESOLUTION	ACFT. ALT.
			LAT.	Lon.	SFC.	FLT.LVL.			OUT	IN					
61	23	1452	28.3	80.6											
62	23	1500	28.4	80.6	45		1000						DMSF		
63	23	1800	28.8	80 0	45		1000						GOES 7	2,3 VIS 4	
64	23	1950	28.9	79.5	40	40	998		24	24			GOES 7	2,3 VIS 4	
65	23	2158	29.3	78.4	25	28	999						AF	3/3	457M
66	23	2326	29.6	77.9		47	999		22	24			AF	3/5	457M
67	24	0000	29.7	77.6	45		1000						GOES 7	2,3 IR 8	
68	24	0333	30.1	76.2	35		1005						DMSF		
69	24	0514	31.5	76.0		27	1002		14	20			AF	1/10	457M
70	24	0600	31.2	75.3	35		1005						GOES 7	-,5 IR 8	
71	24	1200	32.5	73.0	35		1005						GOES 7	-,5 IR 8	
72	24	1432	32.9	69.0	25								DMSF		
73	24	1800	34.1	66.9	35		1005						GOES 7	-,5 VIS 1	

Table 7. Supplementary vortex data messages, 1988 Atlantic tropical cyclones.

SEP 06 1988  
AF365 J2XXA INVEST ON 15 K41A  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : Z - 02  
FLALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 204 DEGREES

LAT	LOX	RDST(V4)	PRS(V3)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.5	89.5	8		227/067		OBSERVED MAX
22.5	89.6	CENTER	991			
21.8	90.0	52	991	220/037	24	22
22.1	90.0	37	999	240/053	24	24
22.3	90.0	28	993	290/031	25	23
22.8	89.7	13	997	110/013	24	22
23.1	89.7	30	999	140/023	24	22
23.4	89.7	48	990	140/022	24	22
23.6	89.7	60	991	109/037	24	23
23.8	89.7	72	992	100/013	25	22
24.2	89.8	96	993	120/021	25	22
24.5	89.8	114	994	130/022	25	23
24.6	89.7	90		096/037		OBSERVED MAX WIND

SEP 08 1988  
AF78J J311A FLORENCE ON 12 K41A  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0325Z - 0957Z  
FLALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 310 DEGREES

LAT	LOX	RDST(V4)	PRS(V3)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.1	91.1	101	992	020/027	25	23
23.9	90.3	61	991	050/013	25	23
23.7	90.6	65	990	010/017	25	23
23.5	90.4	47	995	037/025	25	22
23.3	90.4	32	997	050/023	24	23
23.1	90.0	17	995	340/021	24	22
23.0	89.8	9	991	110/025	25	24
23.3	90.2	32		037/023		OBSERVED MAX WIND
23.0	89.7	CENTER	990			
22.9	89.4	17	995	210/024	25	24
22.5	89.3	25	997	190/041	23	23
22.7	89.1	37	990	200/057	23	23
22.4	88.9	57	991	000/043	23	23
22.2	88.7	73	992	120/025	23	22
22.0	88.6	93	993	210/031	23	22
22.7	89.1	37		208/057		OBSERVED MAX WIND



SEP 08, 1988  
 AF361 3411A FLORENCE 03 15 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 10247 - 10937  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 53 DEGREES

LAT	LOX	R0ST(NM)	PR0(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.5	87.9	105	093	160/035	23	
23.3	88.1	94	092	170/033	24	22
23.3	88.3	83	092	160/035	24	23
23.3	88.6	67	091	170/033	24	22
23.2	88.9	50	090	177/044	23	22
23.2	89.1	39	09.1	170/044	22	22
23.2	89.4	22	093	160/034	24	23
23.2	89.1	39		177/044	OBSERVED MAX WIND	
23.1	89.1	CENTER				

SEP 08, 1988  
 AF361 3411A FLORENCE 03 04 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 17332 - 17522  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 330 DEGREES

LAT	LOX	R0ST(NM)	PR0(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	90.0	55	001	060/029	25	22
24.0	90.0	45	000	040/031	26	23
23.8	89.9	32	998	020/025	25	23
23.7	89.7	21	996	090/013	27	24
23.3	89.5	6	994	090/013	25	26
24.0	90.0	45		052/031	OBSERVED MAX WIND	
23.4	89.5	CENTER		994		
23.1	89.5	18	997	250/025	27	25
23.0	89.7	26	998	280/034	27	25
22.5	90.0	60	002	280/031	27	25
22.3	89.7	66	004	220/047	22	22
22.2	89.5	72	004	220/042	23	22
22.0	89.5	84	006	230/035	24	23
	89.7	66		270/047	OBSERVED MAX WIND	



SEP 08, 1988  
 AF361 0411A FLORENCE 03 10 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2142Z - 2211Z  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 174 DEGREES

LAT	LOX	R0ST(NM)	PRS(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.2	89.2	108	004	240/026	25	24
22.4	89.2	96	003	230/029	24	24
22.6	89.3	84	001	230/041	25	24
22.7	89.4	86	002	250/025	25	25
23.2	89.4	48	999	280/032	27	25
23.5	89.4	30	997	240/022	27	25
23.8	89.4	12	995	280/029	27	25
22.6	89.3	84		265/041	OBSERVED MAX WIND	
24.3	89.4	CENTER	992			
24.3	89.3	18	995	050/015	27	27
24.6	89.3	36	998	050/033	26	25
24.8	89.4	48	000	060/031	25	24
25.1	89.4	66	001	090/023	27	24
25.3	89.5	78	002	080/024	27	24
25.6	89.5	96		070/024	27	24
25.8	89.5	108	002	060/023	27	24
24.8	89.4	48		090/031	OBSERVED MAX WIND	

SEP 09, 1988  
 AF361 0411A FLORENCE 03 13 COR KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2336Z - 0005Z  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 270 DEGREES

LAT	LOX	R0ST(NM)	PRS(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	91.2	109	003	350/022	27	25
24.1	90.9	93	002	340/018	27	25
24.1	90.6	76	002	350/025	27	25
24.1	90.3	60	001	360/028	27	25
24.2	90.2	54	000	340/032	27	24
	89.9	38	998	010/035	27	25
24.3	89.6	22	995	010/041	26	25
24.3	89.6	22		015/041	OBSERVED MAX WIND	
24.2	89.2	CENTER	993			

NNNN  
 ZCZC WBC931  
 URNT14 KNIA 090130  
 AF061 0411A FLORENCE OB 13 KNIA  
 SUPPLEMENTARY VORTEX DATA MESSAGE  
 01242 10912 10003 12725 35022  
 02241 20909 20002 22725 34018  
 03241 30906 30002 32725 35025  
 04241 40903 40001 42725 36028  
 05242 50902 50000 52724 34032  
 06243 60899 60998 62725 01035  
 07243 70896 70995 72625 01041  
 MF243 80896 MF041  
 OBS 01 AT 2336Z OBS 07 AT 0005  
 OBS 01 SFC WND 35015  
 REMARKS 242 892 993;

SEP 29 1985						
AF061 0411A FLORENCE OB 13 KNIA						
SUPPLEMENTARY VORTEX						
OBSERVATION PERIOD : 0543Z - 0814Z						
FLYALT : 01500 FT						
ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 104 DEGREES						
LAT	LN	RST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.6	87.2	113	004	170/042	25	21
24.7	87.5	95	002	180/046	25	21
24.7	87.7	83	001	180/056	24	22
24.7	88.0	69	999	180/062	24	22
24.7	88.3	54	998	180/064	24	23
24.8	88.5	42	996	190/062	23	23
24.9	88.8	24	993	210/045	25	24
25.0	89.0	12	991	230/025	25	25
24.7	88.3	54		205/064	OBSERVED MAX WIND	
25.1	89.2	CENTER	988			
25.1	89.5	16	991	350/037	25	25
25.1	89.9	38	994	350/044	24	23
25.1	90.2	54	998	340/039	24	22
25.1	90.4	65	998	340/034	24	22
25.1	90.6	76	998	330/024	24	22
25.1	90.9	92	999	310/023	23	22
25.2	91.1	103	000	320/018	24	22
25.1	89.9	38		360/044	OBSERVED MAX WIND	

SEP 29, 1984							
AF 268 2511A FLORENCE 03 07 K41A							
<del>SUPPLEMENTARY VORTEX</del>							
OBSERVATION PERIOD : 0414Z - 0403Z							
FLTALT : 05000 FT							
ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 348 DEGREES							
LAT	LOX	R0ST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)	
25.3	89.5	104	001	090/023	24	22	
25.0	89.5	86	001	040/024	23	21	
25.7	89.5	69	000	070/035	24	22	
25.5	89.5	58	999	070/032	23	23	
25.3	89.5	47	997	060/030	24	23	
25.0	89.4	29	994	050/037	24	23	
24.9	89.3	21	992	050/032	24	23	
24.7	89.2	8	990	010/017	24	24	
24.5	89.1	6	990	280/017	25	25	
25.0	89.4	29		055/037	OBSERVED MAX WIND		
24.9	89.1	CENTER	988				
24.5	89.1	0	989	280/015	24	24	
24.4	89.1	12	992	250/027	25	24	
24.2	89.0	24	995	270/059	24	24	
23.9	88.9	43	441	210/045	19	15	
23.7	89.0	54	449	230/045	19	15	
23.5	89.1	66	456	240/032	19	15	
23.3	89.1	78	462	250/030	18	14	
23.0	89.1	96	471	250/030	19	15	
24.2	89.0	24		257/054	OBSERVED MAX WIND		

SEP 09, 1988  
 AF785 35174 FLJRENCE J3 13 KNIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0952Z - 1008Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 183 DEGREES

LAT	LOX	RJST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.2	89.2	84	300	270/034	24	23
24.4	89.2	72	995	270/035	24	24
24.7	89.2	54	996	270/037	24	24
24.9	89.2	42	995	280/039	24	24
25.1	89.2	30	991	290/037	25	25
25.3	89.2	18	989	290/017	25	25
24.7	89.2	42		270/039	OBSERVED MAX WIND	
25.6	89.2	CENTER	957			
25.7	89.2	6	988	130/030	25	25
25.0	89.2	24	991	110/050	24	24
25.3	89.3	42	994	100/042	24	23
25.5	89.3	54	996	040/033	21	21
25.8	89.3	72	996	100/032	21	21
27.1	89.3	90	628	110/032	13	14
27.3	89.3	102	638	060/024	13	14
25.0	89.2	24		090/050	OBSERVED MAX WIND	

SEP 10, 1984  
 AF75J J212A CYCLONE J3-12 KMA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0247Z - 0444Z  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 24 DEGREES

LAT	LOX	R05T(NM)	PR5(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.4	62.0	112	004	040/034	23	22
15.2	63.0	90	004	050/013	24	22
15.0	61.9	43	004	100/025	22	22
15.7	61.7	37	004	/	24	22
15.6	61.6	33	004	/	23	22
15.5	61.7	79	004	040/013	23	22
15.2	61.7	70	004	050/013	24	22
14.9	61.9	53	004	190/011	24	22
14.7	62.0	46	004	150/014	24	22
14.7	62.1	40	004	120/023	25	21
15.0	62.4	31		104/025	OBSERVED MAX WIND	
14.7	62.8	CENTER	003			
14.2	62.6	16	004	170/024	23	22
14.3	62.5	40	004	160/023	23	22
14.5	62.5	51	004	170/024	24	22
15.7	62.4	64	004	170/033	23	22
15.0	62.3	83	004	150/015	24	22
15.2	62.6	90	005	120/021	24	22
15.7	62.4	64		111/033	OBSERVED MAX WIND	



SEP 16, 1988  
AF768 1912A GILBERT OB 18 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1348Z - 1434Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 349 DEGREES

LAT	LONG	RDIST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.2	96.5	91	973	090/061	10	10
23.0	96.5	79	947	080/070	10	10
24.8	96.5	68	895	090/078	12	11
24.5	96.5	50	862	070/078	12	10
24.3	96.4	37	801	070/078	12	10
24.0	96.4	21		059/086	OBSERVED MAX WIND	
23.7	96.2	CENTER	533			
23.3	96.1	24	731	260/086	12	12
23.1	96.1	36	835	270/063	11	11
22.9	96.1	48	371	260/061	10	10
22.7	96.1	60	904	280/072	10	10
23.3	96.1	24		257/086	OBSERVED MAX WIND	

SEP 16, 1988  
AF768 1912A GILBERT OB 20 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1442Z - 1533Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 144 DEGREES

LAT	LONG	RDIST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.9	95.6	66	893	230/063	10	10
23.2	95.8	45	837	220/069	11	11
23.4	96.0	29	759	210/063	12	10
23.3	95.9	37		233/078	OBSERVED MAX WIND	
23.8	96.3	CENTER	539			
24.2	96.4	24	747	100/110	12	11
24.3	96.3	30	812	100/084	12	10
24.5	96.3	42	843	100/079	12	09
24.8	96.1	61	899	110/079	11	11
25.0	96.1	72	951	110/078	10	10
25.2	96.0	85	972	110/080	10	09
25.6	95.9	110	906	110/075	09	09
24.2	96.4	24		077/110	OBSERVED MAX WIND	



SEP 16, 1988  
 AF768 1912A GILBERT OB 05 <M14  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0732Z - 0854Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS -99 DEGREES!

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
25.3	95.6	-99	998	080/078	11	08
25.0	95.6	-99	982	080/075	11	08
24.8	95.6	-99	955	080/062	12	08
24.5	95.6	-99	925	060/063	11	10
24.2	95.6	-99	987	070/064	12	10
24.0	95.5	-99	945	060/063	12	10
23.7	95.3	-99	788	050/079	11	11
23.8	95.4	-99		/083	OBSERVED MAX WIND	
****	****	CENTER				
22.9	95.0	-99	598	250/040	12	12
22.6	95.0	-99	802	260/073	12	11
22.4	95.0	-99	830	250/052	12	11
22.2	95.0	-99	385	270/052	11	11
21.9	95.0	-99	924	270/049	11	10
21.6	95.0	-99	957	280/073	10	09
21.4	95.0	-99	970	270/055	10	10
11.9	94.6	-99		0/		
22.8	95.0	-99		/079	OBSERVED MAX WIND	

SEP 16, 1988  
 AF768 1912A GILBERT OB 12 <M14  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1218Z - 1319Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 276 DEGREES!

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.9	97.1	55	905	010/073	10	10
23.8	96.9	43	856	360/075	11	11
23.8	96.6	27	798	010/074	11	09
23.7	96.4	17	744	360/083	12	11
23.7	96.4	17		340/083	OBSERVED MAX WIND	
23.8	96.1	CENTER		540		
23.8	95.6	27	596	150/078	13	12
23.8	95.4	38	798	150/089	12	10
23.8	95.1	54	846	170/064	12	11
23.8	94.9	65	386	170/074	11	11
23.8	95.4	38		179/089	OBSERVED MAX WIND	

SEP 15, 1988  
 AF 284 1712A GILBERT 09 20 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1918Z - 2347Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 205 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
20.7	93.8	92	951	310/060	11	10
20.9	93.7	79	938	300/057	11	11
21.2	93.4	56	896	290/053	11	11
21.3	93.3	49	878	290/061	11	10
21.5	93.1	36	832	270/064	12	10
21.7	92.9	26	781	260/051	11	11
21.5	93.1	36		270/064	OBSERVED MAX WIND	
22.1	93.1	CENTER	655			
22.2	93.1	6	658	140/046	15	14
22.4	92.9	21	717	130/075	15	11
22.6	92.8	34	802	130/092	13	12
22.8	92.6	50	847	140/083	11	10
22.9	92.5	58	874	140/084	12	09
23.1	92.3	74	905	140/075	11	11
23.2	92.1	86	939	140/079	11	10
22.7	92.7	42		121/100	OBSERVED MAX WIND	

SEP 15, 1988  
 AF 284 1712A GILBERT 09 20 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2232Z - 2336Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 260 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.1	90.5	73	749	350/061	11	11
21.2	90.2	56	722	360/050	11	10
21.3	90.0	44	697	360/054	11	10
21.3	89.7	27	605	360/071	11	11
21.5	89.7	30	777	040/043	12	12
21.5	89.2	12	722	050/044	13	12
21.3	89.7	27		360/071	OBSERVED MAX WIND	
21.3	89.2	CENTER	500			
21.7	89.0	26	741	100/052	13	12
21.3	88.8	37	500	110/083	13	13
22.0	88.6	53	656	130/078	11	10
22.1	88.2	73	702	140/074	12	09
22.2	88.0	86	730	140/074	12	09
22.2	87.9	90	757	140/074	12	07
22.5	87.5	118	778	140/022	12	07
21.3	88.8	37		126/083	OBSERVED MAX WIND	



SEP 15, 1988  
 AF263 1712A GILBERT 03 12 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1601Z - 1707Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 328 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.0	93.2	63	938	060/061	11	11
22.8	93.1	50	923	060/068	11	11
22.6	93.0	37	866	060/078	11	11
22.5	92.8	26	800	060/067	12	12
22.3	92.6	12	726	050/065	13	13
22.6	93.0	37		053/078	OBSERVED MAX WIND	
22.1	92.6	CENTER	953			
22.0	92.4	12	733	220/049	14	12
21.8	92.2	28	790	220/058	13	12
21.7	91.9	45	842	220/068	12	11
21.5	91.7	61	891	210/060	11	11
21.3	91.5	77	924	220/062	12	10
21.1	91.3	94	967	200/069	11	10
21.0	91.1	106	937	200/062	11	08
21.2	91.4	86		218/083	OBSERVED MAX WIND	

SEP 15, 1988  
 AF268 1712A GILBERT 03 16 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1725Z - 1844Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 79 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.4	91.5	67	907	160/073	12	10
22.5	91.7	58	880	150/073	13	09
22.4	92.1	35	929	150/085	13	12
22.4	92.3	25	781	150/074	13	12
22.3	92.6	8	717	140/065	14	13
22.4	92.1	35		160/085	OBSERVED MAX WIND	
22.2	92.7	CENTER	952			
22.4	92.9	16	700	060/056	14	14
22.3	93.1	23	726	020/058	13	13
22.2	93.5	44	812	350/083	11	11
22.1	93.6	50	839	360/077	12	10
22.1	93.9	67	888	360/072	11	10
22.1	94.1	78	917	360/070	11	11
22.1	94.4	94	943	360/075	11	10
22.2	93.5	44		360/083	OBSERVED MAX WIND	

SEP 15, 1988.  
 AF768 1712A GILBERT OB 08 (MIA)  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1317Z - 1502Z  
 FLTALT : 10000 FT.

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 21 DEGREES

LAT	LONG	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.8	91.1	122	999	120/067	11	11
23.6	91.2	109	992	120/070	11	11
23.4	91.3	96	965	120/073	12	08
23.2	91.5	81	938	110/068	12	10
22.9	91.6	62	907	110/067	10	10
22.7	91.8	48	868	110/073	11	10
22.5	91.9	36	825	100/070	12	12
22.2	92.0	18	764	090/045	13	11
22.7	91.8	48		096/073	OBSERVED MAX WIND	
21.9	91.9	CENTER	950			
22.1	92.0	13	756	080/061	14	12
22.3	92.0	24	756	080/070	13	13
22.6	92.1	43	822	090/092	12	12
22.8	92.2	56	889	090/078	11	10
23.2	92.2	79	935	090/079	11	11
23.6	92.1	90	962	090/075	11	10
23.8	92.1	102	986	100/077	11	10
22.8	92.1	43		075/092	OBSERVED MAX WIND	



SEP 15 1988  
 AF763 1712A GILBERT OB 17 COR KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1034Z - 1200Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 274 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.91	92.9	83	954	350/045	11	11
21.9	92.8	78	929	360/046	11	11
21.9	92.4	56	894	350/062	12	12
21.91	92.2	44	876	350/047	11	11
21.91	91.9	28	801	360/067	13	13
21.9	91.7	17	751	360/064	14	14
21.91		28		012/067	OBSERVED MAX WIND	
21.81		CENTER	666			
21.9		17	764	170/059	14	12
21.9		33	816	180/048	12	12
21.94		44	865	170/071	11	10
21.9	90.3	61	904	170/060	11	11
21.91	90.0	78	932	/	12	11
22.0	89.8	89	958	170/023	11	11
22.0	89.7	95	971	170/073	11	11
22.01	89.7	95		172/073	OBSERVED MAX WIND	

SEP 15 1988  
 AF768 1712A GILBERT OB 08 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1317Z - 1502Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 21 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.81	91.1	122	999	120/067	11	11
23.61	91.2	109	992	120/070	11	11
23.41	91.3	96	965	120/073	12	08
23.21	91.5	81	938	110/068	12	10
22.91	91.6	62	907	110/067	10	10
22.71	91.8	48	868	110/073	11	10
22.51	91.9	36	825	100/070	12	12
22.21	92.0	18	764	090/045	13	11
22.7	91.8	48		096/073	OBSERVED MAX WIND	
21.91	91.9	CENTER	950			
22.11	92.0	13	756	080/061	14	12
22.3	92.0	24	756	080/070	13	13
22.6	92.1	43	822	090/092	12	12
22.8	92.2	56	889	090/078	11	10
23.2	92.2	79	935	090/079	11	11

SEP 15, 1988  
AF763 1512A GILBERT OB 09 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0700Z - 0741Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 241 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.31	91.2	25	797	320/049	14	13
21.4	91.0	12	735	340/038	14	13
21.6	90.8	6	688	300/022	15	15
21.3	91.2	25		331/049	OBSERVED MAX WIND	
21.5	90.8	CENTER	951			
21.7	90.3	20	747	160/057	13	13
21.71	90.3	30	807	170/063	13	13
21.8	90.1	43	823	170/072	12	12
21.8	90.1	43		155/072	OBSERVED MAX WIND	

SEP 15, 1988  
AF763 1512A GILBERT OB 13 COR KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0812Z - 0944Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 6 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.5	90.9	102	979	110/065	11	11
23.3	91.0	90	960	100/067	11	11
23.0	91.1	72	930	090/056	11	11
22.9	91.1	66	906	090/075	11	09
22.6	91.1	48	896	090/071	11	11
22.3	91.2	30	805	080/076	12	12
22.0	91.2	13	750	060/056	13	13
22.3	91.2	30		079/076	OBSERVED MAX WIND	
21.8	91.1	CENTER	950			
22.0	91.3	16	745	040/055	13	13
22.11	91.5	28	798	040/060	12	12
22.2	91.8	45	872	/	11	11
22.3	92.0	58	902	040/065	11	11
22.5	92.3	78	931	050/065	11	11
22.6	92.4	86	947	040/062	11	11
22.8	92.5	98	963	060/058	11	11
22.3	92.0	58		031/065	OBSERVED MAX WIND	

SEP 15 1988  
 AF784 1412A GILBERT OB 20 KMIA:  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0359Z - 0435Z  
 FLTALT : 10000 FT.

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS: 83 DEGREES:

LAT.	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.71	88.3	112	992	160/065	11	10
21.6	88.5	100	956	160/057	18	10
21.6	88.8	83	928	160/055	12	09
21.5	89.1	67	713	160/058	12	12
21.5	89.3	55	879	170/058	13	08
21.5	89.6	39	552	170/054	12	11
21.51	90.9	33	731	160/053	13	13
21.7	88.3	112		173/065	OBSERVED MAX WIND	
21.5	90.3	CENTER	949			

SEP 15 1988  
 AF763 1512A GILBERT OB 05 KMIA:  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0457Z - 0633Z  
 FLTALT : 10000 FT.

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS: 22 DEGREES:

LAT	LON	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.3	89.3	116	000	120/067	12	11
23.1	89.5	101	975	120/065	12	12
23.3	89.6	94	967	110/065	12	12
22.7	89.7	75	936	100/061	12	11
22.6	89.9	55	909	110/069	11	11
22.0	90.3	32	832	090/057	12	12
21.8	90.4	24	787	090/040	12	12
21.5	90.5	22	684	070/036	12	12
22.6	89.9	55		101/069	OBSERVED MAX WIND	
21.5	90.1	CENTER	949			
21.3	90.8	40	768	300/044	11	11
21.3	91.0	55	810	/	16	13
20.9	91.2	71	872	320/029	11	11
20.7	91.3	82	911	320/043	11	11
20.5	91.5	98	943	310/050	11	11
20.2	91.7	118	969	310/050	11	11
20.1	91.8	127	982	310/053	11	11
20.2	91.7	118		319/054	OBSERVED MAX WIND	



SEP 14, 1985  
AF284 1412A GILBERT OR 07 COR <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2145Z - 2227Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 62 DEGREES

LAT	LONG	RDBT(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.9	87.5	106	910	150/080	11	11
21.7	87.8	91	868	150/080	11	09
21.9	88.5	61	787	150/085	11	10
21.8	88.3	65	766	130/092	12	12
21.8	88.7	50	748	100/063	12	12
21.8	88.3	65		130/092	OBSERVED MAX WIND	
21.1	89.2	CENTER	500			
21.7	88.9	39	751	080/052	12	12
21.5	89.3	24	816	040/074	12	12
21.5	89.5	29	852	030/077	11	11
21.3	89.7	30	928	020/020	11	11
21.2	89.9	39	935	360/070	11	10
21.1	90.2	56	944	360/063	12	08
21.0	90.5	73	959	360/069	11	10
21.0	90.7	84	971	360/062	11	10
21.5	89.3	24		076/074	OBSERVED MAX WIND	

SEP 15, 1988  
AF284 1412A GILBERT OR 12 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2344Z - 0058Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 63 DEGREES

LAT	LONG	RDBT(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
22.2	87.9	93	940	130/075	11	11
22.1	88.0	85	923	130/082	12	10
22.0	88.2	73	897	130/071	11	10
21.9	88.5	55	881	190/073	12	10
21.7	88.7	40	835	140/074	13	10
21.5	89.0	22	740	140/063	14	12
21.5	89.1	16	591	150/079	14	13
21.1	88.0	85		154/082	OBSERVED MAX WIND	
21.3	89.4	CENTER	596			
21.8	89.5	18	311	100/067	12	12
22.0	89.5	30	838	110/092	11	11
22.3	89.5	48	891	100/070	11	11
22.8	89.5	78	935	100/061	12	11
22.9	89.5	84	956	100/063	11	11
23.0	89.5	90	974	110/072	12	08
23.1	89.5	96	980	110/070	12	08

SEP 14, 1988  
AF284 1412A GILBERT 03 05 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2045Z - 2129Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 42 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.6	86.5	57	740	140/083	13	12
21.7	88.2	73	813	110/095	11	10
22.0	88.0	86	863	120/095	11	10
22.1	87.9	94	393	130/085	12	10
22.1	86.5	162	933	140/072	12	10
22.1	87.3	121	951	140/068	12	09
22.0	87.0	134	976	160/072	11	07
22.0	86.6	154	999	160/065	11	07
22.0	88.0	86		140/095		OBSERVED MAX WIND
21.1	89.2	CENTER	500			

SEP 14, 1988  
AF284 1412A GILBERT 03 07 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2145Z - 2227Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 62 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.7	87.5	106	910	130/080	11	11
21.7	87.8	91	868	150/080	11	09
21.9	88.5	61	787	150/085	11	10
21.8	88.3	65	766	130/092	12	12
21.8	88.7	50	748	100/063	12	12
21.8	88.3	65		130/092		OBSERVED MAX WIND
21.1	89.2	CENTER	500			
21.7	88.9	39	751	080/050	12	12
21.5	89.5	24	816	040/075	12	12
21.5	89.5	29	852	030/017	11	11
21.3	89.7	30	928	020/020	11	11
21.2	89.9	39	935	360/070	11	10
21.1	90.2	56	944	360/063	12	08
21.0	90.5	73	959	360/068	11	10
21.0	90.7	84	971	360/062	11	10
21.5	89.3	24		076/076		OBSERVED MAX WIND



AF 263 3812A GILBERT 03 15 00Z KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2253Z - 2341Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 327 DEGREES

LAT	LOX	RST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.5	78.5	21	235	060/067	10	10
13.7	78.6	34	267	040/049	10	10
13.0	78.8	55	311	060/061	09	09
12.3	79.0	77	331	060/063	09	09
12.4	79.1	85	351	050/035	08	08
13.9	79.3	70	321	060/051	09	09
13.7	78.6	34		060/067	OBSERVED MAX WIND	
13.2	78.3	CENTER	781			
13.6	79.4	67	311	360/035	10	10
13.6	79.2	56	296	010/047	09	09
13.5	79.0	46	283	350/045	11	10
13.5	78.8	33	243	360/061	10	10
13.5	78.5	21	276	350/067	10	10
13.5	78.8	33		032/051	OBSERVED MAX WIND	

SEP 14, 1988  
~~AF 284 1412A GILBERT 03 01 KMIA~~  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1948Z - 2012Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 338 DEGREES

LAT	LOX	RST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.0	90.0	122	324	070/052	11	09
22.8	90.0	111	312	040/043	10	10
22.5	90.0	95	301	060/065	12	08
22.3	90.0	84	293	050/062	13	07
22.2	90.0	79	275	040/062	12	12
21.8	90.0	61	263	040/070	10	10
21.5	90.0	50	253	030/063	11	10
21.3	89.9	40	247	020/062	11	09
21.8	90.0	61		043/070	OBSERVED MAX WIND	
21.1	89.2	CENTER	500			

AF765 1112A GILBERT OB 14 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1201Z - 1319Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 223 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.7	82.3	91	028	310/035	11	09
17.8	82.2	82	019	320/037	11	11
13.0	82.0	66	004	320/045	11	11
13.2	81.8	49	080	320/052	11	11
13.4	81.6	33	044	320/055	12	12
13.6	81.4	16	886	300/053	12	12
13.4	81.6	33		313/055	OBSERVED MAX WIND	
13.8	81.2	CENTER	496			
12.0	81.1	13	803	140/110	12	12
12.3	80.9	34	033	140/082	12	12
12.4	80.7	45	076	130/060	11	10
12.6	80.6	58	097	130/062	11	11
12.7	80.5	67	012	130/057	11	11
12.9	80.3	83	030	130/067	11	11
23.11	80.1	99	044	120/045	10	10
17.0	81.1	13		115/110	OBSERVED MAX WIND	

AF763 1112A GILBERT OB 18 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1338Z - 1458Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 3 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.5	81.5	96	044	090/030	10	10
23.4	81.6	84	029	080/035	11	11
23.2	81.6	72	017	090/060	11	11
23.0	81.6	60	098	090/063	11	11
17.7	81.6	42	079	080/068	12	12
17.4	81.6	27	015	080/075	12	12
17.2	81.6	12	831	080/087	13	13
17.21	81.6	12		090/087	OBSERVED MAX WIND	
17.0	81.6	CENTER	427			
13.7	81.7	18	889	300/055	13	13
13.5	81.7	30	034	280/050	12	12
13.2	81.7	48	083	260/050	12	12
12.9	81.7	66	094	250/045	12	12
12.7	81.7	78	013	240/040	11	11
13.7	81.7	18		287/055	OBSERVED MAX WIND	

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0712Z - 0820Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 46 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	DEWPT(C)
17.5	79.1	70	976	120/065	11
17.3	79.2	57	961	130/055	10
17.1	79.5	37	943	130/069	12
17.4	79.6	47	929	130/075	12
15.8	79.4	34	854	130/093	12
13.8	79.4	34		169/093	OBSERVED MAX WIND
13.7	80.0	CENTER	595		
13.5	80.3	20	818	280/074	14
13.3	80.4	33	900	290/042	13
13.2	80.6	45	944	300/037	12
17.9	80.9	70	969	330/028	12
17.8	81.1	82	986	330/022	12
17.5	81.3	99	000	290/050	11
17.5	81.4	107	000	310/019	10
13.5	80.3	20		324/074	OBSERVED MAX WIND

AF963 1112A GILBERT OB 10 (MIA)  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1028Z - 1143Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 85 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.8	79.5	79	315	180/010	11	11
13.8	79.7	68	993	150/020	11	11
13.9	79.9	58	969	170/050	12	12
13.9	80.1	47	944	160/070	13	10
13.9	80.4	30	917	160/085	12	11
13.8	80.6	18	944	140/090	12	12
13.8	80.8	8	582	160/074	16	14
13.8	80.6	18		160/090		OBSERVED MAX WIND
13.7	80.9	CENTER	521			
13.7	81.2	17	884	340/070	13	11
13.7	81.4	28	928	350/055	12	12
13.7	81.7	45	966	010/030	12	12
13.7	81.9	36	990	010/060	11	11
13.7	82.2	73	007	360/040	11	11
13.7	82.5	90	025	010/040	10	10
13.7	82.7	102	332	360/035	11	11
13.7	81.2	17		360/070		OBSERVED MAX WIND

SEP 12 1983  
 AF763 0512A GILBERT 03 16 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2319Z - 0104Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 265 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.7	73.4	80	360	350/048	09	09
15.7	73.1	63	051	350/046	08	08
15.7	72.9	52	335	360/051	09	09
15.7	72.7	40	311	360/048	09	08
15.8	72.5	28	271	010/053	08	08
15.8	72.2	11	206	010/054	10	10
15.8	72.2	11		360/054	OBSERVED MAX WIND	
15.8	72.0	CENTER	782			
15.9	71.6	23	910	180/058	11	11
15.9	71.5	29	962	190/067	10	10
15.9	71.2	46	016	170/075	08	08
15.9	70.9	63	045	180/065	08	08
15.9	70.7	74	366	170/055	08	08
15.9	70.3	97	087	170/045	08	08
15.9	70.2	103	098	170/045	08	08
15.9	71.2	46		172/075	OBSERVED MAX WIND	

SEP 12 1983  
 AF783 1012A GILBERT 08 06 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0426Z - 0527Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 140 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.5	77.7	54	349	180/049	11	
17.7	77.9	37	343	180/041	11	
17.8	78.0	29	316	180/043	10	
18.0	78.2	13	312	190/045	11	
18.2	78.5	11	989	180/055	11	
18.2	78.7	22	974	180/058	11	
18.3	79.1	46	869	180/104	11	
18.3	79.1	46		007/104	OBSERVED MAX WIND	
18.2	78.3	CENTER	781			
18.5	79.6	76	315	060/082	11	
18.7	79.7	85	215	070/083	13	
18.8	80.0	103	273	070/045	11	
19.0	80.1	113	994	070/042	11	
19.2	80.3	128	009	070/062	11	
19.3	80.5	141	015	080/047	10	
19.3	80.7	151	327	070/052	11	
19.6	79.7	83		016/083	OBSERVED MAX WIND	



SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1705Z - 1848Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 83 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	74.6	114	074	/	09	09
13.0	74.9	97	063	150/034	09	09
13.0	75.1	86	051	160/064	09	09
13.0	75.4	69	033	160/053	10	10
17.9	75.7	51	015	180/054	09	09
17.9	75.0	34	063	160/067	10	10
17.9	75.2	23		165/081	OBSERVED MAX WIND	
17.8	76.0	CENTER	792			
17.7	77.0	23	880	340/055	09	09
17.6	77.1	31	944	320/052	11	11
17.4	77.3	46	984	310/045	10	10
17.3	77.5	59	006	340/035	09	09
17.2	77.7	72	022	350/053	09	09
17.1	78.0	90	029	320/025	09	09
17.0	78.3	108	042	310/025	10	10
17.7	77.0	23		345/055	OBSERVED MAX WIND	

AF261 0812A GILBERT 09 05 COR <MIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1706Z - 1848Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 83 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	74.6	114	074	/	09	09
13.0	74.9	97	063	150/034	09	09
13.0	75.1	86	051	160/064	09	09
13.0	75.4	69	033	160/053	10	10
17.9	75.7	51	015	180/054	09	09
17.9	75.0	34	063	160/067	10	10
	76.2			165/081	OBSERVED MAX WIND	
17.8	76.6	CENTER	792			
17.7	77.0	23	880	340/055	09	09
17.6	77.1	31	944	320/052	11	11
17.4	77.3	46	984	310/045	10	10
17.3	77.5	59	006	340/035	09	09
17.2	77.7	72	022	350/053	09	09
17.1	78.0	90	029	320/025	09	09
17.0	78.3	108	042	310/025	10	10
17.7	77.0	23		345/055	OBSERVED MAX WIND	



OBSERVATION PERIOD : 0749Z - 0218Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 324 DEGREES

LAT	LOX	R0ST(VM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.9	75.4	96	371	090/045	12	07
13.7	75.2	80	362	070/052	11	09
13.6	75.0	69	342	070/065	12	08
13.4	74.8	53	329	080/067	13	10
13.3	74.7	45	310	080/075	13	10
13.1	74.6	32	268	070/107	13	10
17.8	74.5	13	343	040/082	11	11
13.1	74.6	32		052/103	OBSERVED MAX WIND	
17.6	74.4	CENTER	774			
17.4	74.1	20	213	220/075	11	11
17.3	73.9	33	303	210/055	13	13
17.1	73.8	45	330	200/061	13	13
15.9	73.6	62	352	200/053	09	09
15.7	73.4	78	355	200/053	09	09
15.5	73.2	95	363	190/045	13	13
15.3	73.0	112	370	180/041	13	13
17.4	74.1	20		214/075	OBSERVED MAX WIND	

SEP 12 1988  
 AF280 0712A GILBERT 01 22 CWIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1115Z - 1236Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 227 DEGREES

LAT	LOX	R0ST(VM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.8	75.2	70	346	330/037	13	13
17.0	76.1	58	343	320/037	11	10
17.2	75.9	41	333	320/033	13	13
17.3	75.7	29	304	340/053	13	13
17.4	75.4	13	225	320/072	13	10
17.4	74.5	47		194/072	OBSERVED MAX WIND	
17.6	75.3	CENTER	960			
17.7	75.0	18	336	200/095	13	13
17.7	74.8	29	379	170/087	13	13
17.7	74.5	46	328	180/063	13	10
17.7	74.3	57	340	170/043	13	10
17.7	74.0	74	358	170/045	13	08
17.7	73.8	89	371	120/056	13	10
17.7	73.5	103	377	160/060	13	09
17.7	74.7	23		152/107	OBSERVED MAX WIND	

SEP 11, 1988  
 AF763 0512A GILBERT OR 12 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2144Z - 2250Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 173 DEGREES

LAT	LOX	RJST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
14.3	71.2	108	369	350/045	09	08
15.3	71.2	96	351	250/040	09	08
15.4	71.2	72	336	250/052	09	08
15.6	71.2	61	317	250/060	09	07
15.8	71.2	49	312	250/050	09	09
15.1	71.2	32	239	250/052	10	10
15.3	71.2	21	209	240/060	13	12
15.3	71.2	21		237/060	OBSERVED MAX WIND	
15.6	71.4	CENTER	206			
15.8	71.5	13	310	070/038	14	10
17.1	71.5	30	398	090/055	12	12
17.3	71.5	42	241	100/094	09	09
17.4	71.5	48	274	100/063	11	10
17.5	71.5	60	302	100/075	09	09
17.3	71.5	42		032/094	OBSERVED MAX WIND	

SEP 12, 1988  
 AF793 0712A GILBERT OR 07 CMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0453Z - 0556Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 17 DEGREES

LAT	LOX	RJST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.8	73.1	37	262	110/102	10	05
17.6	73.3	24	325	120/110	15	09
17.5	73.3	18	306	100/050	17	09
17.6	73.3	24		090/110	OBSERVED MAX WIND	
17.2	73.3	CENTER	773			
17.1	73.6	18	351	330/040	11	11
15.9	73.7	29	268	330/065	10	10
15.7	73.7	37	315	300/050	08	08
15.5	74.1	62	336	290/040	09	09
15.4	74.3	74	362	310/031	10	09
15.2	74.5	91	368	330/025	09	09
15.0	74.7	108	374	320/015	09	09
15.9	73.7	29		321/065	OBSERVED MAX WIND	

OBSERVATION PERIOD : 1150Z - 1215Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 15 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.5	69.0	87	064	090/065	10	09
17.3	69.0	75	058	090/078	09	09
17.2	69.0	69	039	090/083	09	09
15.7	69.0	53	999	100/009	10	10
14.6	69.5	90	067	240/031	08	08
14.5	69.5	96	074	250/032	08	08
13.7	69.5	24		283/045	OBSERVED MAX WIND	
15.1	69.4	CENTER	977			

SEP 11, 1988

AF763 J512A GILBERT OB 05 (MIA)  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1632Z - 1843Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 33 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.7	69.5	114	091	120/039	09	08
17.5	69.5	110	082	110/050	09	08
17.5	69.7	98	063	110/052	09	08
17.2	69.8	80	038	120/052	10	08
17.0	69.9	67	021	120/055	09	08
15.8	70.1	50	984	120/058	10	09
15.5	70.2	33	887	120/069	10	09
15.7	70.1	46		128/073	OBSERVED MAX WIND	
15.1	70.6	CENTER	972			
15.3	70.5	13	855	140/013	14	09
15.5	70.6	30	880	090/045	11	10
15.7	70.6	36	952	090/085	12	10
17.1	70.6	60	990	100/043	09	09
17.3	70.6	72	023	100/057	10	10
17.6	70.6	90	048	100/057	08	08
17.8	70.6	102	061	100/056	09	09
15.7	70.6	36		090/085	OBSERVED MAX WIND	

SEP 11, 1988  
AF780 0412A GILBERT OB 05 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0509Z - 0648Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 308 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
17.2	69.3	95	095	050/045	10	08
15.9	69.1	75	088	040/064	10	10
15.7	68.9	59	069	030/060	10	10
15.7	68.6	45	046	030/065	10	10
15.5	68.4	29	024	040/065	10	10
15.4	68.2	16	997	040/042	10	10
15.6	68.5	37		039/070	OBSERVED MAX WIND	
15.2	68.0	CENTER	985			
15.0	67.7	21	965	230/023	11	11
15.8	67.5	37	999	220/058	09	09
15.7	67.3	50	033	200/052	09	09
15.5	67.1	66	050	200/035	09	09
15.4	66.9	79	061	240/022	08	08
15.2	66.8	91	073	200/035	08	08
15.0	66.7	104	075	190/020	08	08
15.8	67.5	37		219/058	OBSERVED MAX WIND	

SEP 11, 1988  
AF780 0412A GILBERT OB 11 <MIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0900Z - 1028Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 228 DEGREES

LAT	LOX	RDST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.0	69.9	100	063	300/039	07	07
15.2	69.7	83	054	330/035	09	09
15.3	69.5	70	040	310/045	10	10
15.5	69.3	54	015	290/055		11
15.8	69.1	36	083	300/049	11	09
15.0	68.9	18	044	290/034	12	12
15.5	69.3	54		318/055	OBSERVED MAX WIND	
15.1	68.6	CENTER	985			
15.6	68.5	30	968	130/084	10	10
15.8	68.5	42	990	150/089	08	08
15.9	68.3	51	024	140/060	09	09
17.1	68.1	66	053	130/064	09	09
17.2	67.8	80	069	130/055	10	10
17.4	67.6	96	086	120/042	09	09
17.6	67.5	110	094	120/049	09	09
15.8	68.5	42	98	097/089	OBSERVED MAX WIND	

SEP 10, 1988  
 AF780 0312A GILBERT OB 05 <MIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1535Z - 1906Z  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 297 DEGREES

LAT	LOX	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
15.8	65.6	13	994	330/027	24	24
15.9	65.8	26	995	350/027	23	23
15.0	66.1	44	996	020/027	23	23
15.2	66.2	55	997	030/033	23	23
15.4	66.4	71	998	040/037	23	23
15.5	66.7	89	999	050/035	24	23
15.7	66.8	100	001	057/041	24	23
15.3	66.3	63		034/041	OBSERVED MAX WIND	
15.7	65.4	CENTER	993			

SEP 11, 1988  
 AF780 0312A GILBERT OB 12 <MIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2310Z - 0036Z  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 167 DEGREES

LAT	LOX	RDST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
14.6	66.5	79	000	270/035	23	23
14.8	66.5	68	999	260/038	23	23
15.1	66.5	51	997	250/037	23	23
15.4	66.5	34	995	260/035	23	23
15.6	66.6	21	993	260/040	23	23
15.7	66.7	13	987	240/049	24	24
15.6	66.6	21		237/047	OBSERVED MAX WIND	
15.9	66.8	CENTER	984			
15.1	66.8	12	992	100/021	23	23
15.4	66.8	30	993	100/034	23	23
16.6	66.8	42	995	090/062	23	23
15.8	66.8	54	998	090/067	22	22
17.1	66.8	72	001	090/071	22	22
15.9	66.8	60		090/074	OBSERVED MAX WIND	



OBSERVATION PERIOD : 0119Z - 0244Z  
 FLTA - T : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LN	RJST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.5	56.6	99	504	170/029	13	15
12.5	56.9	32		130/036	18	15
12.5	57.2	64		130/035	18	15
12.5	57.5	46		140/035	18	15
12.5	57.7	35		140/021	18	17
12.5	57.9	23	485	160/027	18	17
	58.2	8	479	140/013	18	18
	58.5	13	473	240/005	19	
	56.9	82		170/036	OBSERVED MAX WIND	
	58.3	CENTER				
	58.7	23	476	060/012	21	16
	59.0	41		070/019	18	16
	59.5	71	493	060/011	19	17
12.3	60.0	100		050/016	19	16
12.3	60.1	106	501	050/015	19	15
12.5	59.0	41		360/019	OBSERVED MAX WIND	

OCT 13, 1988  
 AF705 0117A JOAN 03 11 KMI4  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1439Z - 1549Z  
 FLTA - T : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 94 DEGREES

LAT	LN	RJST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.7	55.4	70	312	120/032	21	21
12.6	55.7	54	311	120/039	23	23
12.5	55.9	44	311	150/015	24	22
12.5	55.7	54		192/039	OBSERVED MAX WIND	
12.8	56.6	CENTER		324		
12.5	56.5	5	308	060/052	23	23
12.3	57.4	46	487	060/025	15	15
12.8	57.7	64	493	060/027	15	14
12.3	56.5	5		170/052	OBSERVED MAX WIND	

OBSERVATION PERIOD : 0303Z - 1444Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 209 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)	
11.3	59.4	82	498	290/019	19	15	
11.5	59.2		494	230/014	13	15	
11.5	59.0	62	492	290/021	18	16	
11.7	58.9	49	488	270/025	18	17	
11.9	58.7	36	482	230/017	13	17	
12.0	58.5	32	479	240/020	18	17	
12.1	58.3	33	475	240/025	18		
12.1	58.3	33		225/025	OBSERVED MAX WIND		
12.3	58.7	CENTER					
12.9	58.3	33	471	140/033	19	17	
13.1	58.1	50	452	130/029	18	14	
13.2	58.0	58	445	130/025	18		
13.4	57.8	75	438	120/025	17	14	
13.5	57.7	83	434	130/029	17	16	
13.5	57.6	92	434	120/022	17		
13.7	57.5	100	427	120/019	17	15	
12.2	58.3	33		134/033	OBSERVED MAX WIND		

OCT 15, 1988  
 AF360 3617A JOAN 03 04 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2320Z - 0056Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 325 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)	
13.2	62.1	72	479	110/031	20	10	
13.1	62.0	64	441	090/023	19	12	
12.5	61.7	29	450	090/024	17	13	
12.4	61.6	15	441	070/031	18	10	
12.2	61.5	5	435	360/013	20	14	
12.4	61.6	15		045/031	OBSERVED MAX WIND		
12.2	61.4	CENTER					
11.9	61.2	21	462	240/014	17	13	
11.5	60.9	37	454	130/015	17	13	
11.7	60.8	46	471	130/021	16	13	
11.5	60.7	55	457	160/015	19	11	
11.3	60.5	75	445	140/035	19	11	
11.1	60.3	92	470	160/017	17	10	
11.0	60.2	100	474	160/010	17	15	
11.3	60.5	75		225/035	OBSERVED MAX WIND		

OCT 15, 1935  
 AF360 0417A JOAN 03 07 CON NMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0124Z - 0305Z  
 FLTAFT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LOH	R DIST (NM)	HGT (M)	WIND (KTS)	TEMP (C)	DEWPT (C)
12.2	59.8	140		120/015	17	
12.2		134	470	130/027	17	15
12.2	60.2	117		120/012	13	12
12.2	60.4			140/015		12
12.2				120/018	15	
12.2		70		130/015	15	
12.2	61.2	5		140/018		
		41		220/025	17	
12.2	61.7	29		130/008	15	12
12.1	61.9			200/014	17	12
12.2	59.9	134		179/027	OBSERVED MAX WIND	
12.2	62.2	CENTER				
	62.5	17		350/011		
12.2	62.7		455	040/013		
12.1				040/021		
12.1						10
12.1	63.5	70			13	10
12.2					13	10
12.2			475	050/009	18	10
12.1	63.1	53		153/021	OBSERVED MAX WIND	

OCT 15, 1935  
 AF360 0417A JOAN 03 10 NMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0359Z - 1440Z  
 FLTAFT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 185 DEGREES

LAT	LOH	R DIST (NM)	HGT (M)	WIND (KTS)	TEMP (C)	DEWPT (C)
10.9	62.9	73	460	270/004	13	13
11.1	62.9			280/013	13	13
11.4	62.8	40	454	280/015	13	11
11.6	62.8	50	451	70/013		10
11.8	62.8	24	456	240/012		12
12.1	62.8		448	500/009	17	15
11.4	62.8	40			OBSERVED MAX WIND	
12.2	62.7	CENTER	460			
12.5	62.8		452	070/015		14
12.7	62.8	30		080/025	15	15
12.9	62.7	42	455	120/017		14
12.7	62.8	30		078/025	OBSERVED MAX WIND	

OCT 15, 1988  
 AF36J J417A JOAN 03 12 KM14  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0507Z - 0515Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 282 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.4	63.7	54	464	030/025	17	14
12.3	63.5	41	451	030/014	18	13
12.2	63.2	23	455	030/017	18	
12.1	63.1	10	446	350/018	20	11
12.4	63.7	54		012/025	OBSERVED MAX WIND	
12.2	62.8	CENTER	443			
12.5	62.6	18		120/013	17	13
12.6	62.0	26	449	090/011	15	15
12.8	62.3	46	465	140/016	15	15
13.0	62.1	63	462	150/018	17	14
13.1	62.0	71	468	180/009	16	15
13.2	61.8	83	460	100/024	17	15
13.3	61.7	92	471	120/015	15	15
12.2	61.8	58		179/025	OBSERVED MAX WIND	

OCT 15, 1988  
 AF384 0517A JOAN 03 05 KM14  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1116Z - 1307Z  
 FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 65 DEGREES

LAT	LOX	RST(NM)	PRSM(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.8	62.2	129	009	120/025	24	18
12.7	62.5	110	009	090/027	23	20
12.6	62.7	97	009	100/031	23	21
12.5	62.9	84	008	100/032	24	20
12.5	63.1	73	008	100/038	23	23
12.2	63.3	55	008	100/026	24	22
11.9	63.3	52	008	120/012	23	21
11.7	63.3	54	007	120/015	24	22
11.4	63.4	67	008	180/025	24	22
11.6	63.7	34		170/027		
11.7	64.0	16		180/043		
12.5	63.1	73		150/038	OBSERVED MAX WIND	
11.9	64.2	CENTER	001			
11.6	64.3	18	007	230/011	24	24
11.5	64.5	29	008	340/012	23	21
11.3	64.6	43	008	070/012	24	21
11.2	64.7	51	008	100/007	24	20
11.1	64.8	59	008	060/007	24	24
11.0	64.8	64	008	360/005	25	22

OCT 16, 1988  
AF360 0617A JOAN 03 04 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2227Z - 0004Z  
FL FALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 356 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.7	66.0	96	463	130/025	19	14
13.5	66.0	84	460	110/030	17	13
13.3	66.0	72	460	110/019	17	13
13.0	66.0	54	453	110/035	19	13
12.7	66.0	36	450	090/034	17	12
12.5	65.0	24	447	110/030	17	14
	66.0	8	432	060/027	19	15
13.0	66.0	54		083/035	OBSERVED MAX WIND	
12.1	65.9	CENTER	412			
11.8	65.9	18	448	250/010	18	15
11.5	65.9	36	451	200/018	16	15
11.3	65.9	48	460	/	17	15
11.1	65.9	60	463	220/021	15	13
10.9	65.9	72	469	190/021	17	14
11.1	65.9	60		270/021	OBSERVED MAX WIND	

OCT 16, 1988  
AF360 0617A JOAN 03 07 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0041Z - 0310Z  
FL FALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.0	64.4	123	475	140/018	19	10
12.0	64.6	111	476	160/016	18	12
12.0	64.9	93	473	170/013	17	12
12.0	65.2	76	473	170/021	17	14
12.0	65.5	58	470	160/029	17	13
12.0	65.7	46	463	160/012	17	14
12.0	65.9	35	457	160/010	17	14
12.0	65.5	58		179/029	OBSERVED MAX WIND	
12.0	65.5	CENTER	428			
12.3	66.6	18	441	090/029	20	14
12.5	66.5	30	459	110/029	19	12
12.8	66.5	48	466	130/023	19	13
13.0	66.5	60	469	100/029	19	13
13.3	66.5	78	475	120/029	19	12
13.5	66.5	90	478	100/027	18	12
13.8	66.5	108	491	100/029	19	12
12.5	66.5	30		090/029	OBSERVED MAX WIND	



OCT 15 1988  
AF 363 0617A JOAN 03 10 KM14  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0421Z - 0501Z  
FLYALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 303 DEGREES

LAT	LOX	RST(M)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.1	68.6	119	472	090/012	13	13
12.9	68.5	108	469	080/014	13	13
12.8	68.3	95	469	080/020	13	12
12.6	68.0	73	466	050/011	13	13
12.5	67.8	60	463	060/014	17	14
12.3	67.6	44	459	060/021	13	12
12.2	67.4	31	450	020/021		
12.1	67.0	3		045/032		
12.0	66.9	CENTER	405			
12.2	66.8	13	441	140/031	13	14
12.5	66.6	34	454	150/024	18	15
12.6	66.5	42	457	130/024	17	15
12.8	66.3	59	462	120/023	16	13
12.9	66.1	71	465	140/022	17	13
13.1	65.9	83	474	100/021	17	13
13.3	65.7	105	478	100/023	17	12
12.2	65.8	13		114/031	OBSERVED MAX WIND	

OCT 15 1988  
AF 363 0717A JOAN 03 05 KM14  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1214Z - 1244Z  
FLYALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 35 DEGREE

LAT	LOX	RST(M)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.5	66.8	130	310	140/007	23	22
13.4	67.0	119	310	120/011	23	20
13.2	67.2	102	311	130/007	23	20
13.0	67.5	82	310	160/014	23	22
12.9	67.6	74	309	140/021	23	21
12.7	67.8	58	309	110/024	23	22
12.5	68.0	43	309	110/024	22	20
12.3	68.2	30	307	100/037	22	20
12.1	68.2	18	306	120/033	23	22
11.9	68.2	6	301	080/025	24	24
12.0	68.2	12		090/051	OBSERVED MAX WIND	
11.8	68.2	CENTER	300			
11.3	68.2	0	303	210/042	23	23
11.6	68.0	16	309	130/034	21	21
11.5	67.8	27	310	200/025	22	22
11.3	67.6	46	311	220/021	23	18
11.1	67.5	58	311	240/013	22	21
10.9	67.3	75	311	250/014	23	20
10.7	67.2	88	311	220/015	23	21

OCT 15 1988  
AF 763 0717A JOAN 03 03 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1303Z - 1414Z  
FL FALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 24 DEGREES

LAT	LOX	RJST(NM)	PRC(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.7	69.4	135	011	210/007	24	13
11.7	68.8	112	012	220/015	23	21
11.8	67.0	100	012	190/002	22	21
11.8	67.2	88	012	180/012	22	20
11.8	67.5	70	011	210/033	22	19
11.8	67.7	59	010	190/033	22	21
11.9	67.8	52	010	190/047	22	20
11.8	68.3	24	008	160/031	19	19
11.9	68.2	29		170/064	OBSERVED MAX WIND	
11.9	68.7	CENTER	001			
12.1	68.8	13	006	070/044	23	23
12.3	69.0	29	008	070/023	24	22
12.5	69.2	46	009	050/025	25	21
12.5	69.4	58	010	060/023	25	22
12.8	69.6	75	010	090/018	25	22
13.0	69.7	88	011	080/023	25	22
13.2	69.9	105	011	080/024	25	21
12.1	69.8	13		063/044	OBSERVED MAX WIND	

OCT 15 1988  
AF 763 0717A JOAN 03 11 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1523Z - 1627Z  
FL FALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 270 DEGREES

LAT	LOX	RJST(NM)	PRC(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.0	69.6	41	008	360/014	25	20
12.0	69.3	23		350/018	24	21
12.0	69.0	5	002	350/018	24	23
12.0	69.3	23		360/018	OBSERVED MAX WIND	
12.0	68.9	CENTER	000			
12.0	69.0	5	001	070/007	25	24
12.2	68.8	13	005	120/055	23	22
12.5	68.9	30	007	100/041	23	22
12.8	69.0	48	008	100/033	24	21
13.1	69.9	66	009	090/023	24	21
12.2	68.8	13		114/055	OBSERVED MAX WIND	

JCT 15, 1988  
AF 768 3717A JOAN 03 14 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1645Z - 1800Z  
FLTALT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 315 DEGREES

LAT	LN	RST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.8	69.8	58	309	050/017	25	22
12.5	69.7	46	307	060/024	25	23
12.5	69.5	33	306	050/034	25	20
12.2	69.4	18	303	050/052	24	25
12.5	69.5	33		045/034	OBSERVED MAX WIND	
12.1	69.1	CENTER	300			
12.3	68.8	18	305	170/032	22	22
12.3	68.7	24	307	170/032	22	21
12.3	68.4	41	307	190/014	23	21
12.3	68.1	59	308	190/024	23	21
12.3	67.8	76	309	170/011	24	21
12.3	67.6	83	309	180/007	24	23
12.3	67.3	105	308	170/013	25	18
12.3	68.8	18		198/032	OBSERVED MAX WIND	

JCT 17, 1988  
AF 768 3817A JOAN 03 05 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2323Z - 0027Z  
FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 54 DEGREES

LAT	LN	RST(NM)	PRS(MB)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.3	68.5	98	493	100/024	13	13
12.9	68.7	85	487			
12.7	68.9	68				
12.5	69.1	52	490	110/024	13	13
12.4	69.5	29	474	120/034	17	13
12.3	69.6	21	471	130/034	13	14
12.3	69.8	13	460	120/043	18	13
12.3	69.8	13		116/043	OBSERVED MAX WIND	
12.1	69.9	CENTER	450			
12.7	70.5	50	470	090/044	17	17
12.7	70.7	59	477	080/043	17	15
12.8	71.0	76	474	090/035	17	13
12.9	71.4	100	487	090/034	13	13
13.3	71.7	118	491	080/034	13	13
13.3	71.9	129	490	100/021	13	12
13.1	72.1	142	475	080/007	19	11
12.7	70.5	50		045/044	OBSERVED MAX WIND	

AF763 JY17A JOAN 03 05 KM13  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1114Z - 1250Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 343 DEGREES

LAT	LOX	R0ST(VM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.7	72.5	117	483	070/033	17	14
13.5	72.5	106	494	080/024	17	15
13.2	72.5	89	484	070/024	17	14
12.9	72.5	72	491	070/033	17	13
12.7	72.5	61	471	060/047	17	14
12.5	72.5	56	474	060/047	17	15
12.7	72.5	61		061/047	OBSERVED MAX WIND	

11.8 72.0 CENTER 300

12.4	73.0	68	486	070/037	17	15
12.7	73.1	84	494	080/027	15	13
12.9	73.3	100	496	060/033	17	14
13.1	73.3	109	496	090/031	17	14
13.3	73.5	125	499	050/024	17	14
13.5	73.6	138	499	070/014	17	14
13.8	73.8	159	512	080/027	18	14
14.0	73.8	168	512	070/017	13	14
12.4	73.0	61		031/037	OBSERVED MAX WIND	

OCT 17, 1988  
 AF784 JY17A JOAN 03 13 KM14  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1254Z - 1400Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 327 DEGREES

LAT	LOX	R0ST(VM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.7	71.5	64	494	050/034	18	12
12.8	71.3	53	497	050/031	15	15
12.7	71.2	45	484	060/033	17	17
12.5	71.1	37	481	050/035	17	14
12.4	70.9	24	476	070/047	15	15
12.2	70.9	12	461	070/054	17	15
12.0	70.9	0	392	060/031	19	15
12.2	70.9	12		090/055	OBSERVED MAX WIND	

12.0 70.9 CENTER 390

12.2	70.9	12	443	090/064	15	15
12.3	70.8	30	476	100/037	17	15
12.9	70.9	54	488	090/032	17	14
13.1	70.9	66	491	110/033	18	14
13.4	71.0	84	502	100/024	17	15
13.5	71.1	105	500	080/027	15	15
13.7	71.4	106	500	060/024	13	15
12.2	70.9	12		090/064	OBSERVED MAX WIND	



AF784 JB17A JOAN 03 12 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0423Z - 0451Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 5 DEGREES

LAT	LDN	RST(M)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.0	71.1	54	487	080/027	18	13
12.9	71.1	48	480	070/035	17	14
12.8	70.8	48	481	070/031	17	15
12.7	70.6	50	480	080/024	17	15
12.9	71.1	48		094/035	OBSERVED MAX WIND	
12.1	71.2	CENTER	480			
12.9	70.7	56	484	110/030	17	14
13.0	71.0	55	484	100/034	18	13
13.1	71.2	60	486	090/030	18	13
13.2	71.2	60	480	100/031	18	13
13.1	71.2	60		090/030	OBSERVED MAX WIND	

JCF 17, 1933

AF785 JB17A JOAN 03 08 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1403Z - 1540Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 273 DEGREES

LAT	LDN	RST(M)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	74.2	94	498	020/011	15	15
11.8	73.9	70	498	090/007	16	15
11.3	73.6	59	495	040/000	17	15
11.8	73.4	47	495	040/020	17	14
11.8	73.4	47		007/020	OBSERVED MAX WIND	
11.7	72.0	CENTER	300			
12.3	72.6	36	474	100/045	17	14
12.4	72.4	43	472	110/030	18	13
12.5	72.2	50	479	110/037	18	12
12.8	72.1	72	475	100/020	18	12
13.1	71.9	93	494	110/030	18	12
13.2	71.8	101	495	100/031	17	12
13.5	71.6	122	500	100/031	18	13
14.0	71.4	154	591	120/017	17	14
12.5	72.6	36		090/045	OBSERVED MAX WIND	



0CT 17, 1968  
 AF763 0917A JOAN 03 11 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1541Z - 1744Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 332 DEGREES

LAT	LOX	RST(VM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.3	73.8	101	494	100/025	18	12
13.1	73.6	85	491	120/024	15	14
12.9	73.5	72	488	110/035	17	14
12.5	73.4	53	485	090/024	16	14
12.4	73.3	40	476	080/034	16	13
12.2	73.3	29	461	060/041	15	15
12.0	73.1	13	433	060/065	17	13
12.0	73.1	13		063/065	OBSERVED MAX WIND	
11.8	73.0	CENTER	350			
12.1	73.0	18	448	090/051	18	13
12.4	73.0	36	464	070/044	17	13
12.5	73.0	43	473	090/031	17	13
12.9	73.0	66	482	070/024	16	13
13.1	73.0	76	482	060/019	15	13
13.3	73.0	90	486	080/032	15	14
11.9	72.9	8		134/073	OBSERVED MAX WIND	

AF784 1017A JOAN 03 02 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0352Z - 0204Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 229 DEGREES

LAT	LOX	RST(VM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.2	74.8	46	314	240/014	15	15
11.3	74.7	37	476	350/019	17	17
11.4	74.5	25	453	350/023	13	15
11.5	74.4	13	424	310/044	13	15
11.6	74.2	0		090/074	OBSERVED MAX WIND	
11.7	74.2	CENTER	230			
12.2	74.5	34	416	070/079	17	17
12.3	74.3	36	476	100/035	13	16
12.5	74.3	54	486	100/069	17	17
12.8	74.2	65	473	100/024	13	15
13.0	74.1	75	466	130/023	17	15
13.3	74.1	96	494	120/023	23	13
13.5	74.1	106	495	110/031	19	15
12.2	74.5	34		059/079	OBSERVED MAX WIND	

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 32332 - 33472  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 315 DEGREES

LAT	LONG	RST(VM)	ALT(M)	WIND(KTS)	TEMP(C)	DEPHT(C)
12.8	75.6	83	435	050/027	17	15
12.6	75.4	67	492	050/027	19	15
12.5	75.2	54	488	060/032	17	13
12.3	75.0	38	479	050/037	18	16
12.2	74.8	26	475	040/045	15	15
12.0	74.7	13	419	040/067	15	15
11.8	74.6	0		090/087		OBSERVED MAX WIND
11.8	74.6	CENTER	376			
11.9	74.4	13	458	140/041	17	16
11.8	74.1	29	490	120/021	18	15
11.8	73.9	41	485	160/025	17	15
11.8	73.6	58	456	130/017	17	16
11.7	73.3	76	442	110/021	13	13
11.7	73.1	85	451	130/017	13	17
11.7	72.9	100	445	100/015	18	18
11.9	74.5	0		134/071		OBSERVED MAX WIND

OCT 1977  
 AF704 1017A JOAN DJ 15 KME4  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 34352 - 35247  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 5 DEGREES

LAT	LONG	RST(VM)	ALT(M)	WIND(KTS)	TEMP(C)	DEPHT(C)
13.5	74.9	114	426	070/027	13	16
13.3	74.9	96	440	070/029	13	15
13.1	74.9	84	492	050/027	17	17
12.8	74.9	67	454	060/023	13	16
12.5	74.9	35	480	090/025	17	13
12.4	74.9	43	479	070/037	17	17
12.1	74.9	26	473	070/057	17	17
11.8	75.0	0	413	090/065	15	15
11.8	75.0	0		134/083		OBSERVED MAX WIND
11.7	75.1	CENTER	320			
11.3	75.2	24	465	320/017	17	16
11.2	75.1	30	444	230/017	17	17
11.3	75.2	24		263/017		OBSERVED MAX WIND

SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1512Z - 1543Z  
FLIGHT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 101 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	74.7	30	10	170/011	09	07
11.5	74.9	17	107	130/024	10	07
11.8	75.4	12	073	180/042	11	07
11.4	75.1	13		243/064		OBSERVED MAX WIND
11.5	75.2	CENTER	977			

011 13, 1983

AF360 1117A JOAN 03 07 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1 - 12  
FLIGHT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 79 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.2	75.2	30		121/043		OBSERVED MAX WIND
11.3	75.7	CENTER	912			
11.5	75.9	55	270	100/014	10	05
11.3	75.6	64	300	100/007	10	05
11.2	75.6	63	305	120/012	09	05
11.1	75.7	50	300	150/030	10	07
11.1	75.0	42	378	150/033	10	05
11.2	75.2	30	361	170/043	09	05
11.2	75.4	10	310	140/014	08	07
11.2	75.9	13	354	010/062	09	03
11.1	77.1	20	371	050/041	07	07
11.1	77.3	37	370	030/031	07	05
11.1	77.7	40	311	050/033	10	03
11.2	77.9	70	370	060/024	09	03
11.2	78.1	62	300	060/024	09	03
11.2	78.5	105	374	060/023	09	04
11.2	75.9	13		353/062		OBSERVED MAX WIND



OCT 19, 1944  
 AF 703 1217A JOAN OR 07 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0335Z - 0531Z  
 FLIGHT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 85 DEGREE

LAT	LONG	ROST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.3	75.2	65	472	140/014	15	14
11.2	75.4	76	463	150/023	15	14
11.2	75.7	55	454	170/034	15	15
11.3	75.9	47	442	160/023	15	15
11.3	77.2	30	419	150/033	15	15
11.3	77.5	15	387	160/064	15	15
11.3	77.5	15		152/094	OBSERVED MAX WIND	
11.2	77.7	CENTER	147			
11.2	77.8	5	320	020/061	39	03
11.2	78.1	23	356	010/055	39	05
11.2	78.4	41	375	030/047	38	08
11.2	78.6	53	387	030/044	38	05
11.2	78.9	70	392	040/043	38	08
11.2	79.2	88	392	060/023	33	05
11.2	79.4	100	395	050/031	35	05
11.2	77.7	0		090/087	OBSERVED MAX WIND	

ASPL OCT 19, 1944  
 AF 703 1217A JOAN KMIA  
 OBSERVATION PERIOD : 0720Z - 0740Z

TIME	LAT	LONG	ASS ALT(FT)	H VALUE(FT)	HT OF STANDARD PRESSURE SURFACE (M) OR SLP (MB)
0729	11.18	77.77	9732	-180	2954
0730	11.23	77.77	10303	-233	2934
0731	11.22	77.73	10307	-200	2948
0732	11.19	77.75	9915	-180	2956
0733	11.22	77.33	9978	-223	2942
0734	11.24	77.77	10345	-217	2941
0735	11.22	77.73	10355	-177	2954
0736	11.18	77.74	9941	-115	2976
0737	11.20	77.73	9922	-200	2950
0738	11.25	77.81	9967	-207	2947
0739	11.25	77.77	9974	-164	2950
0740	11.21	77.75	9945	-187	2954
0741	11.21	77.41	10313	-207	2946
0742	11.24	77.73	9961	-161	2951
0743	11.20	77.74	9945	-187	2954
0744	11.19	77.77	10333	-164	2958
0745	11.24	77.73	10343	-128	2959
0746	11.27	77.73	10353	-200	2947
0747	11.32	77.71	9987	52	3026
0748	11.38	77.59	9991	226	3079

OCT 12, 1965  
 AF765 12174 JOAN 03 13 CON KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0957Z - 1017Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 224 DEGREES

LAT	LOX	RDIST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.3	76.9	101	102	230/019	33	07
13.1	76.7	86	389	180/014	37	07
13.4	78.5	67	396	310/024	38	08
13.3	78.3	54	377	320/033	38	08
13.3	78.1	43	365	330/044	38	07
13.2	77.9	31	341	330/034	38	05
11.3	77.7	12		270/065		OBSERVED MAX WIND
11.2	77.7	CENTER	304			
13.5	77.6	42	309	120/052	39	09
11.7	77.5	32	355	120/037	39	07
11.9	77.4	45	377	120/035	38	05
12.1	77.2	61	330	110/035	39	04
12.2	76.9	76	324	130/027	38	05
12.3	76.8	84	347	120/032	37	05
12.5	76.7	97	399	130/033	35	04
11.3	77.6	0		134/095		OBSERVED MAX WIND

OCT 12, 1965  
 AF563 13174 JOAN 03 07 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1107Z - 1221Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 33 DEGREES

LAT	LOX	RDIST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.5	77.3	34	396	090/039	13	05
12.6	77.4	76	391	110/029	13	05
12.2	77.7	55	364	090/059	13	04
12.3	77.8	43	373	100/039	12	07
11.8	77.9	29	345	110/054	13	07
11.8	78.1	15	370	090/074	11	07
11.3	78.1	6		134/114		OBSERVED MAX WIND
11.4	78.2	CENTER	749			
11.5	78.4	13	317	050/053	13	08
11.7	78.6	27	357	040/039	13	05
11.7	78.8	46	377	060/045	13	05
12.2	79.0	67	364	060/039	12	04
12.3	79.1	75	392	080/025	12	04
12.5	79.3	92	388	090/017	12	05
12.7	79.5	109	388	090/025	12	05
11.3	78.3	0		045/094		OBSERVED MAX WIND



OCT 19 1988  
 AF360 1317A JOAN 03 11 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1243Z - 1407Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 266 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.3	79.9	88	399	040/023	13	06
	79.7	76	105	010/025	39	05
11.4	79.4	58	101	010/039	39	04
11.4	79.2	47	384	030/049	33	04
11.4	78.9	29	365	020/039	09	06
11.4	78.7	17	326	360/055	13	09
11.4	78.6	11	798	360/055	14	13
11.3	78.5	8		314/073	OBSERVED MAX WIND	
11.4	78.4	CENTER	708			
11.4	78.1	17	349	210/044	39	09
11.4	77.9	29	377	190/029	39	05
11.4	77.6	47	389	170/025	13	04
11.3	77.3	65	399	170/019	39	06
11.3	77.1	76	105	150/017	39	05
11.4	76.8	94	108	130/013	39	08
11.4	76.6	105	114	170/023	13	05
11.4	78.1	17		170/044	OBSERVED MAX WIND	

OCT 19 1988  
 AF360 1317A JOAN 03 15 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1434Z - 1533Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 45 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.5	77.4	104	108	080/025	13	04
12.5	77.4	100	108	080/025	39	06
12.3	77.5	88	107	060/021	13	04
12.1	77.7	72	105	100/023	39	06
11.9	77.9	55	393	100/031	09	04
11.6	78.1	37	384	120/025	13	05
11.6	78.3	26	359	130/038	13	08
11.4	78.6	5	118	150/083	19	09
11.4	78.6	5		170/083	OBSERVED MAX WIND	
11.4	78.7	CENTER	596			
11.7	78.7	18	344		09	09
12.0	78.5	37	380	060/033	13	06
12.2	78.5	49	392	100/035	11	03
12.3	78.5	55	399	090/037	13	04
11.5	78.7	6		090/073	OBSERVED MAX WIND	

OCT 19, 1988  
 AF361 1417A JOAN 03 06 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1548Z - 1756Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 357 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
134.2	79.0	114	095	040/038	09	00
12.3	79.0	90	099	070/034	09	04
12.6	79.0	78	090	070/035	09	04
12.4	79.0	66	095	060/045	10	05
12.2	79.0	54	084	070/043	11	04
11.9	78.9	36	069	060/045	11	07
11.5	78.8	18	098	080/051	10	10
11.5	78.8	13		116/087	OBSERVED MAX WIND	
11.3	78.9	CENTER	709			
11.0	78.9	18	089	300/042	11	11
10.8	78.8	30	045	250/042	09	09
10.5	78.8	48	078	300/022	10	10
10.3	78.8	60	083	310/022	10	10
10.0	78.8	78	090	260/021	10	10
11.0	78.9	18		270/042	OBSERVED MAX WIND	

OCT 20, 1988  
 AF265 1517A JOAN 03 07 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2317Z - 2339Z  
 FLTALT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 39 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.5	78.2	101	088	100/034	08	08
12.2	78.4	80	078	050/010	08	08
12.2	78.5	76	075	070/043	08	08
12.1	78.7	64		090/024	08	08
11.9	78.9	48	056	110/032	08	06
11.7	79.1	32	043	080/027	07	07
11.6	79.2	13	070	100/050	08	08
11.4	79.2	13		116/050	OBSERVED MAX WIND	
11.2	79.3	CENTER	054			
11.0	79.5	16	023	230/080	08	05
10.9	79.7	29	048	250/040	08	07
10.7	79.9	46	059	360/040	08	07
10.5	80.1	59	073	360/038	08	07
10.4	80.3	76	083	350/020	07	07
10.3	80.7	98	086	360/021	08	06
10.1	81.1	125	092	340/018	08	05
11.0	79.5	16		314/080	OBSERVED MAX WIND	

OCT 20, 1988  
 AF 763 15174 JOAN 03 12 COR KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0351Z - 0112Z  
 FL FALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 274 DEGREES

LAT	LOX	R0ST(VM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.4	80.8	76	380	010/025	38	03
11.4	80.6	65	377	020/039	39	03
11.3	80.4	52	358	030/045	39	03
11.3	80.2	41	354	010/047	38	03
11.3	80.1	35	352	360/038	37	07
11.3	79.9	23	306	360/057	38	03
11.3	79.7	11	279	350/077	37	04
11.3	79.7	11		360/077	OBSERVED MAX WIND	
11.3	79.5	CENTER	803			

OCT 20, 1988  
 AF 763 16174 JOAN 03 13 COR KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0530Z - 0558Z  
 FL FALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 354 DEGREES

LAT	LOX	R0ST(VM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.1	79.9	120	103	080/037	38	08
12.8	79.9	102	398	070/039	39	08
12.6	79.9	90	395	060/043	38	08
12.3	79.9	73	392	060/042	37	08
12.1	79.9	61	376	060/043	37	08
11.7	79.8	48	358	060/057	37	09
11.6	79.8	30	341	060/052	38	08
11.3	79.7	12	265	050/064	38	08
11.2	79.7	6		090/077	OBSERVED MAX WIND	
11.1	79.7	CENTER	797			
11.3	79.6	8	293	280/074	11	13
13.7	79.6	24	321	290/057	37	07
13.5	79.6	36	359	280/033	37	07
13.3	79.6	48	371	270/022	38	08
13.3	79.6	66	370	270/034	38	08
11.3	79.6	8		225/074	OBSERVED MAX WIND	

OCT 20 1988  
 AF 763 1617A JOAN 03 15 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0923Z - 0941Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 270 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.1	81.2	94	079	350/031	03	04
11.1	81.0	82	071	350/037	05	06
11.1	80.8	70	061	360/039	07	07
11.1	80.6	58	053	350/060	05	05
11.1	80.5	53	054	360/044	03	03
11.1	80.3	41	036	350/047	03	03
11.1	80.1	29	002	340/055	03	03
11.1	79.9	17		360/075	OBSERVED MAX WIND	
11.1	79.6	CENTER	800			
11.1	79.5	5	998	170/075	14	13
11.1	79.2	23	022	180/045	09	09
11.1	79.0	35	034	190/045	09	09
11.1	78.7	53	057	190/041	09	07
11.1	78.5	64	073	200/035	08	08
11.1	78.2	82	083	180/015	09	07
11.1	77.9	100	083	210/010	03	03
11.1	77.7	111	086	190/025	03	06
11.1	79.2	23		170/075	OBSERVED MAX WIND	

OCT 20 1988  
 AF 361 1717A JOAN 03 05 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1027Z - 1039Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 62 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	78.8	52	059	150/022	09	09
11.5	78.9	47	044	160/034	10	10
11.6	79.1	34	026	170/037	10	10
11.3	79.3	21	067	180/034	12	10
11.1	79.6	CENTER	803			
11.1	79.9	17	002	060/049	11	10
11.1	80.1	29	027	020/047	10	
11.1	80.3	41	054	350/040	10	09
11.1	80.6	58	072	350/047	10	09
11.1	80.8	70	091	360/047	10	09
11.1	81.1	88	087	010/035	09	09
11.1	81.3	100	093	010/039	09	09

OCT 20, 1988  
 AF361 1717A JOAN 03 02 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1211Z - 1235Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 222 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
79.9	80.7	96	095	300/031	11	07
10.0	80.5	84	092	290/031	10	09
10.1	80.3	72	083	290/032	10	09
10.3	80.2	59	077	320/014	10	09
10.5	80.0	38	058	300/025	10	10
10.8	79.9	25	028	310/035	10	10
10.9	79.8	16	962	310/047	11	10
11.1	79.6	CENTER	828			
11.5	79.5	24	010	100/049	11	10
11.7	79.3	40	055	110/049	11	10
11.8	79.1	51	077	120/045	11	08
11.9	78.8	67	082	130/037	10	10
12.0	78.6	79	092	130/033	09	09
12.2	78.5	92	101	120/034	10	10
12.4	78.3	109	110	130/032	10	08

OCT 20, 1988  
 AF384 1817A JOAN 03 07 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1724Z - 1732Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 55 DEGREES

LAT	LOX	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.7	79.3	42	111	120/037	10	09
11.5	79.7	16	089	120/057	11	
11.4	79.7	13	906	120/065	12	10
11.4	79.7	13		152/065		OBSERVED MAX WIND
11.3	79.9	CENTER	836			
11.3	79.9	0	913	060/019	11	11
11.3	80.1	11	077	030/053	11	09
11.4	80.5	35	090	030/039	11	07
11.4	80.6	41	096	030/033	10	09
11.3	80.9	58	096	010/035	10	08
11.3	81.2	76	106	010/019	09	09
11.3	81.4	83	089	030/029	10	09
11.2	81.6	100	099	060/017	09	09
11.3	80.0	5		360/065		OBSERVED MAX WIND



OCT 20, 1988  
 AF 784 1817A JOAN 03 11 KMI  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1957Z - 2007Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 180 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
09.5	79.9	108	384	250/030	09	08
09.8	79.8	90	371	260/035	08	07
10.0	79.8	78	379	240/033	10	07
10.2	79.8	66	380	250/030	10	08
10.5	79.8	48	364	240/041	09	09
10.6	79.9	42	373	240/035	10	10
11.1	79.9	12	385	270/056	11	09
11.2	79.9	6	860	270/062	11	11
11.2	79.9	6		270/062	OBSERVED MAX WIND	
11.3	79.9	CENTER	342			
11.6	79.9	18	317	090/064	12	10
11.8	79.8	30	357	090/051	11	08
12.1	79.8	48	346	100/041	10	07
12.5	79.8	72	357	110/043	09	06
12.6	79.8	78	366	110/023	10	07
12.8	79.8	90	368	130/024	10	07
13.0	79.8	102	381	090/022	09	09
11.8	79.9	18		090/064	OBSERVED MAX WIND	

OCT 21, 1988  
 AF 165 1917A JOAN 03 03 KMI  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2351Z - 0056Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 10 DEGREES

LAT	LN	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
13.1	80.0	97	377	080/035	10	09
13.3	80.0	91	373	030/027	11	07
13.7	80.0	74	370	080/031	12	06
12.5	80.1	61	354	070/045	11	05
12.2	80.1	43	342	080/042	11	05
11.9	80.2	24	390	070/053	11	08
11.5	80.3	6	343	070/043	13	11
11.9	80.2	24		100/053	OBSERVED MAX WIND	
11.5	80.3	CENTER	321			
11.3	80.3	12	350	280/057	11	10
11.0	80.2	30	314	330/030	11	10
10.3	80.3	42	342	280/045	11	08
10.5	80.2	60	362	330/014	10	08
10.3	80.2	72	373	250/022	10	08
10.3	80.3	90	379	260/023	11	05

OCT 21, 1988  
 AF 784 2317A JOAN 03 01 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2140Z - 2254Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS: 96 DEGREES

LAT	LN	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.7	80.5	100	309	170/029	10	08
11.7	80.6	94	387	170/043	10	06
11.7	80.9	77	367	190/044	09	09
11.7	81.2	59	367	180/050	10	07
11.3	81.4	47	361	180/064	09	07
11.9	81.7	29	354	170/064	10	09
11.9	81.9	17	304	170/071	13	10
11.9	82.2	0		090/108	OBSERVED MAX WIND	
11.9	82.2	CENTER	591			
11.5	82.3	18	361	260/071	13	09
11.4	82.3	30	320	280/062	11	11
11.1	82.3	46	345	270/049	09	09
10.9	82.3	60	354	270/034	09	08
10.6	82.3	78	368	260/037	10	07
10.3	82.3	96	383	260/041	10	06

OCT 22, 1988  
 AF 784 2317A JOAN 03 11 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2304Z - 0313Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS: 155 DEGREES

LAT	LN	R0ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
10.5	81.6	85	375	220/043	09	05
10.7	81.9	72	369	210/045	09	05
10.9	81.9	61	356	210/059	10	07
11.2	81.9	46	342	210/047	09	07
11.3	82.1	34	335	240/056	11	09
11.5	82.2	21	343	220/081	14	10
11.7	82.3	8		225/102	OBSERVED MAX WIND	
11.3	82.4	CENTER	566			
12.1	82.4	18	374	100/071	12	10
12.3	82.2	32	324	120/035	10	09
12.4	82.1	40	328	130/065	10	08
12.5	81.9	56	357	130/052	09	07
12.8	81.8	69	380	130/044	09	07
12.9	81.6	81	346	140/039	09	08
13.1	81.4	97	102	140/037	09	07
12.0	82.3	13		116/102	OBSERVED MAX WIND	

OCT 21, 1988  
 AF763-2117A JOAN 03 17 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1330Z - 1505Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 297 DEGREES

LAT	LONG	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
12.1	82.3	65	373	040/042	11	10
12.1	82.1	55	368	040/055	10	08
12.0	81.9	42	345	020/064	10	10
11.8	81.7	26	305	030/060	10	10
<b>11.7</b>	<b>81.5</b>	<b>13</b>	<b>365</b>	<b>020/070</b>	<b>12</b>	<b>12</b>
<b>11.7</b>	<b>81.6</b>	<b>10</b>		<b>018/080</b>	OBSERVED MAX WIND	
<b>11.5</b>	<b>81.3</b>	<b>CENTER</b>	<b>701</b>			
<del>11.6</del>	<del>81.2</del>	<del>5</del>	<del>345</del>	<del>190/101</del>	<del>10</del>	<del>10</del>
<del>11.4</del>	<del>81.0</del>	<del>21</del>	<del>320</del>	<del>210/057</del>	<del>10</del>	<del>09</del>
11.2	80.8	37	361	210/044	08	08
10.9	80.7	54	370	210/047	08	08
10.7	80.5	71	100	210/039	08	08
10.6	80.4	80	390	210/073	08	08
10.4	80.2	90	112	210/024	08	08
11.5	81.2	5		170/101	OBSERVED MAX WIND	

OCT 21, 1988  
 AF763-2017A JOAN 03 11 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1000Z - 1126Z  
 FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 93 DEGREES

LAT	LONG	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.5	79.4	100	385	160/047	10	10
11.5	79.7	80	383	160/057	09	09
11.5	79.9	70	359	170/045	09	09
11.5	80.2	58	346	170/054	10	10
11.5	80.5	41	322	170/050	10	10
11.5	80.7	29	358	160/075	11	11
11.5	80.8	23		170/091	OBSERVED MAX WIND	
<del>11.6</del>	<del>81.2</del>	<del>CENTER</del>	<del>609</del>			
11.4	81.5	21	382	330/081	10	10
11.2	81.0	33	327	320/050	10	10
10.9	81.7	51	300	320/047	10	10
10.7	81.9	67	374	330/045	09	09
10.5	82.0	81	380	320/027	10	10
11.4	81.5	21		325/081	OBSERVED MAX WIND	

OCT 21, 1938  
AF 968 2017A JOAN 03 22 KMIA  
SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0532Z - 0727Z  
FLTALT : 10000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 260 DEGREES

LAT	LONG	R0ST(NM)	HST(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
11.4	82.1	71	367	360/037	03	03
11.4	82.0	65	389	360/037	09	07
11.4	81.6	42	368	010/045	09	05
11.3	81.6	44	324	360/049	09	05
11.3	81.4	34	394	350/065	09	07
11.4	81.0	13	342	350/035	12	10
11.3	81.4	34		328/065	OBSERVED MAX WIND	
11.5	80.9	CENTER	317			
11.7	80.2	41	336	150/065	09	08
11.7	80.0	53	343	170/055	09	03
11.5	79.7	70	363	130/055	09	09
11.5	79.6	76	371	170/049	08	08
11.5	79.4	85	377	160/045	09	03
11.5	79.3	94				
11.5	79.1	106	388	170/036	08	08
11.7	80.2	41		171/065	OBSERVED MAX WIND	

NO/121,1988  
 AF380-3619A KEITH 3d 39 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0755Z - 1206Z  
 FLTAHT : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 275 DEGREES

LAT	LOX	RST(M)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.5	88.0	61	452	350/054	14	11
21.3	87.7	45	434	320/027	14	12
21.3	87.4	28	403	360/024	14	14
21.3	87.2	17	399	040/019	14	14
21.7	85.9	0	365	060/034	17	17
21.5	85.8	8	361	060/013	17	17
21.3	88.0	61		005/054	OBSERVED MAX WIND	
21.7	85.9	CENTER	351			
22.4	86.7	43	421	130/041	15	15
22.5	85.7	55	443	100/033	15	15
22.3	85.7	66	456	100/044	15	15
23.2	86.8	90	466	090/047	15	15
23.3	86.8	96	472	070/047	14	14
23.5	87.0	114	480	040/042	15	12
23.7	87.0	120	485	050/044	15	12
23.2	86.8	90		093/047	OBSERVED MAX WIND	

NO/121,1988  
 AF380-3619A-KEITH 3d 34-KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1515Z - 1758Z  
 FLTAHT : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 7 DEGREES

LAT	LOX	RST(M)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.6	86.9	127	309	330/044	21	23
21.0	86.9	103	306	360/043	21	21
21.3	86.9	91	307	350/051	22	22
23.5	86.9	79	335	370/051	24	24
23.3	86.9	62	303	370/051	24	23
23.3	86.9	45	301	350/044	24	21
22.3	86.9	34	299	390/051	21	21
22.6	86.9	24	296	090/042	21	21
22.4	86.9	17	293	110/044	21	21
23.3	86.9	62		105/051	OBSERVED MAX WIND	
22.3	87.2	CENTER	220			
22.2	86.9	17	291	230/024	22	22
21.3	86.7	33	224	221/041	21	21
21.9	86.5	45	297	210/051	23	23
21.3	86.3	58	300	220/051	21	23
21.7	86.2	66	303	220/034	21	21
21.5	86.1	77	304	220/034	21	23
21.2	86.5	45		211/051	OBSERVED MAX WIND	



NOV 21, 1985  
 AF380-0519A-KEITH-03-07-KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 1940Z - 2027Z  
 FLTA LT : 0500J FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 37 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
28.3	85.0	105	375	140/047	22	20
28.3	86.2	90	303	110/044	24	21
28.5	86.3	77	302	099/045	23	21
28.6	86.5	61	301	100/051	22	22
28.2	86.6	48	998	110/055	22	22
28.1	86.7	40	996	110/054	22	22
28.2	86.9	24	993	120/044	22	22
28.7	87.0	12	991	120/027	22	
28.2	86.6	48		132/055	OBSERVED MAX WIND	
28.5	87.2	CENTER	990			
28.7	87.6	22	993	010/021	22	22
28.6	87.8	33	996	360/062	21	21
28.6	88.1	49	410	360/054	15	15
28.5	88.3	61	423	350/050	15	15
28.5	88.5	72	438	360/057	17	13
28.6	88.9	94	449	340/020	17	13
28.6	89.1	105	456	010/049	17	13
28.3	88.4	66		355/075	OBSERVED MAX WIND	

NOV 21, 1985  
 AF380-0519A-KEITH-03-10-KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2100Z - 2237Z  
 FLTA LT : 0500J FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 195 DEGREES

LAT	LOX	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.9	87.3	60	395	300/075	15	15
22.2	87.3	42	364	280/027	18	17
22.4	87.3	30	352	270/030		
22.6	87.3	18	339	280/017		15
22.9	87.3	60		275/075	OBSERVED	
22.9	87.2	CENTER	329			
23.2	87.2	18	344	130/033	17	17
23.3	87.3	36	368	110/031	17	
23.7	87.4	49	390	100/047	15	15
23.9	87.5	62	412	080/040	15	15
24.1	87.6	75	434	090/044	15	15
24.3	87.7	88	434	070/050	15	15
24.5	87.9	103	453	060/040	16	16
24.3	87.7	88		070/050	OBSERVED MAX WIND	

NOV 22 1988  
 AF 769 0619A KEITH DL JS KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2245Z - 0051Z  
 FLIGHT : 05003-FY

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 6 DEGREES						
LAT	LONG	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.5	85.8	150	473	020/049	14	14
23.2	85.7			020/051	14	14
23.0	85.7		460	079/019	14	14
24.7	86.2	102	450	110/019	14	14
24.5	87.0	90	445	020/031	15	15
24.2	85.8	72	433	140/027	15	15
23.7	85.9	54	416	030/035	15	15
23.6	87.0	36	390	100/041	15	15
23.2	85.7	133		077/051	OBSERVED MAX WIND	
23.0	87.0	CENTER		367		
23.0	87.2	11	371	330/029	13	16
23.0	87.5	27	388	350/037	13	15
23.0	87.8	44	409	350/059	13	16
23.0	88.0	55	433	340/069	13	10
23.0	88.3	71	439	340/065	13	03
23.0	88.5	82	454	340/054	13	06
23.0	88.8	99	460	350/049	12	07
23.0	88.3	71		360/065	OBSERVED MAX WIND	

NOV 22 1988  
 AF 769 0619A KEITH DL JS KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0113Z - 0234Z  
 FLIGHT : 05003-FY

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 220 DEGREES						
LAT	LONG	RST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
21.1	87.9	74	458	330/067	15	10
22.2	87.8	86	456	320/069	18	08
22.3	87.7	78	444	320/049	12	08
21.5	87.5	61	420	330/061	13	14
22.5	87.3	50	401	310/034	12	15
22.3	87.1	34	393	310/034	13	15
22.7	85.9	24	381	270/029	12	15
22.2	87.8	86		310/069	OBSERVED MAX WIND	
23.3	85.8	CENTER		359		
23.5	85.6	15	377	160/037	17	17
23.7	85.5	29	389	150/044	17	16
21.7	86.3	45	435	150/069	15	15
21.0	86.1	56	426	140/057	15	15
24.2	85.9	73	445	140/061	15	15
23.5	85.7	145	453	150/051	15	14
24.3	85.5	105	460	150/044	15	13
23.9	86.3	45		127/069	OBSERVED MAX WIND	

K071221988  
 AF768 0619A K-LTH CJ 13 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0256Z - 0422Z  
 FLTAFT 1-05003 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 20 DEGREES

LAT	LOX	R>ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
24.9	85.5	77	460	110/044	15	14
24.7	85.5	65	455	127/041	15	15
24.6	85.5	50	423	130/057	15	15
24.2	85.0	37	435	129/052	15	15
---	85.9	8	377	090/021	17	
24.6	86.5	50		123/057	OBSERVED MAX WIND	
23.7	87.0	CENTER	35			
23.3	86.8	26	383	290/011	17	15
23.2	85.8	31	389	280/013	20	15
22.9	86.9	48	407	300/047	17	15
22.7	82.9	60	434	310/049	17	
22.5	85.9	64	453	290/051	17	14
22.1	85.9	96	463	320/041	15	13
21.9	87.0	108	469	310/044	14	11
22.5	85.9	66		255/051	OBSERVED MAX WIND	

K071221988  
 AF768 0619A K-LTH CJ 13 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0508Z - 0548Z  
 FLTAFT 1-05003 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LOX	R>ST(NM)	HGT(M)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.8	85.1	93	452	160/057	15	15
23.9	85.4	77	433	150/039	16	16
23.9	85.6	66	423	167/045	16	15
23.8	85.9	49	401	170/035	17	
23.7	85.2	33	387	180/027		
23.7	86.4	22	373	200/013	19	15
23.7	86.7	8	368	270/007	17	
23.3	85.1	93		170/057	OBSERVED MAX WIND	
23.3	86.8	CENTER	362			
23.3	87.1	16	379	300/011		
23.3	87.4	32	423	350/033	13	15
23.3	87.7	49	420	360/041	17	15
23.3	87.9	60	444	360/052	15	13
23.3	88.2	76	455	350/033	13	12
23.3	88.5	93	457	020/035	14	14
23.3	88.7	104	476	010/032	13	12
23.3	87.9	60		367/052	OBSERVED MAX WIND	

NOV 22 1988  
 AF 303 JB19A KEITH Jd J6 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD 1 1354Z - 2112Z  
 FLTAFT 1-01500-FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 900 DEGREES.

LAT	LONG	DIST(NM)	PR5(45)	WIND(KTS)	TEMP(C)	DEPT(C)
27.0	85.5	115	457	340/053	15	14
25.9	85.6	110	450	320/055	12	12
25.7	85.2	95	440	350/065	13	15
25.5	85.0	81	435	310/058	20	15
25.6	85.7	63	425	340/047	17	17
25.3	85.5	49	418	050/020	17	17
25.1	85.3	33	310	360/029	15	13
25.0	84.8	10	362	/	19	19
25.7	84.8	21	362	340/005	20	13
25.9	85.6	110		020/055	OBSERVED MAX WIND	
25.0	84.6	CENTER	273			
25.3	84.4	15	274	250/035	23	
25.5	84.2	32	295	240/034	24	26
25.4	84.0	48	297	220/051	22	
25.3	83.8	63	301	220/047	21	
	83.6	76	302	210/057	22	
25.9	83.4	92	305	210/057	22	
25.5	83.3	100	305	220/044	22	
25.4	84.0	55		227/057	OBSERVED MAX WIND	

NOV 23 1988  
 AF 753 0819Z KEITH DU 13 KMEA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0037Z - 0300Z  
 ALTITUDE : 05000 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STRIP IS 125 DEGREES

LAT	LONG	RST(NM)	HGT(N)	WIND(KTS)	TEMP(C)	DEWPT(C)
23.2	84.0	114	449	267/031	13	
23.3	83.9	70	453	267/045		
23.7	83.8	36	413	267/042	19	
24.3	83.8	00	473	067/024	17	
25.3	83.8	48	391	267/034	19	
26.5	83.9	30	370	267/037	19	
26.5	83.9	16	371	/	19	
26.6	83.9	30	379	267/017	20	
26.3	83.9	16	370	/	18	
26.3	83.9	70		273/044		OBSERVED MAX WIND
27.1	83.3	CENTR	294			
27.2	83.0	0	370	/	17	
27.6	83.0	13	401	177/044	14	
27.5	83.9	50	429	067/032		
27.7	83.0	43	474	067/034		
28.2	83.9	00	450	067/034		
28.4	83.9	70	457	067/034		
28.7	83.8	70	473	067/022		
28.9	83.8	100	474	067/023		
27.4	83.7	12		187/044		OBSERVED MAX WIND



NOV 25, 1988  
 AF780 0917A KEITH JO JS KMIA  
 SUPPLEMENTARY VJKTGX

OBSERVATION PERIOD : 0037Z - 0510Z  
 FLIGHT : 01560 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 363 DEGREES.

LAT	LONG	R DIST (NM)	PRC (45)	WIND (KTS)	TEMP (C)	DEWPT (C)
27.3	83.3	104	007	107/054	21	17
27.7	83.3	86	008	107/055	19	17
28.3	83.3	75	006	107/067	18	18
28.3	83.2	62	005	058/059	18	18
28.3	82.9	42	003	020/059	20	20
27.9	83.0	36	999	100/069	16	15
27.3	83.3	24	995	067/041	14	14
27.3	83.3	21	997	057/015	17	17
27.3	83.3	27	996	040/022	19	19
28.3	83.1	31	995	097/021	18	18
27.3	82.8	15	995	230/023	19	19
27.3	82.9	42		099/059	OBSERVED MAX WIND	
27.3	82.9	CENTER	996			
27.3	82.9	15	996	027/027	23	23
28.6	82.9	30	996	027/012	23	23
28.6	82.9	42	996	027/023	24	23
28.3	82.9	60	996	057/032	24	23
28.1	82.9	72	000	257/048	21	
28.3	82.7	90	003	250/051	22	20
28.6	82.7	102	004	060/041	22	23
28.3	82.7	90		053/051	OBSER MAX WIND	

NO/124/1988  
 AF365 1019A KEITH D3 10 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 2307Z - 2359Z  
 FLTA-T : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 89 DEGREES

LAT	LOX	RST(NM)	PRS(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
27.5	75.7	62	002	150/047	21	20
27.5	75.8	57	001	140/034	22	
27.5	77.1	42	001	170/023	22	21
27.5	77.4	26	000	150/023	22	21
27.5	77.7	12	999	190/010	22	21
<del>27.6</del>	<del>76.7</del>	<del>62</del>		170/047	OBSERVED MAX WIND	
27.5	77.9	CENTER	999			
27.5	78.1	12	001	050/012	23	21
27.5	78.5	31	002	020/013	22	20
27.5	78.7	42	003	010/021	21	
27.5	79.1	62	005	360/020	21	19
27.5	79.6	88	005	340/023	22	19
27.5	79.7	94	005	310/020	22	19
<del>27.5</del>	<del>79.7</del>	<del>94</del>		354/020	OBSERVED MAX WIND	

NO/124/1988  
 AF368 1119A KEITH D3 14 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0427Z - 0505Z  
 FLTA-T : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT RELATIVE TO STORM IS 227 DEGREES

LAT	LOX	RST(NM)	PRS(M3)	WIND(KTS)	TEMP(C)	DEWPT(C)
30.3	77.5	105	006	300/027	20	15
30.5	77.2	86	004	320/019	20	16
30.7	76.9	66	004	320/014	20	17
30.9	76.7	50	003	310/014	20	15
31.0	76.5	39	002	310/007	20	15
31.2	76.3	23	002	290/003	20	15
31.4	76.1	7	002	230/003	21	15
30.3	77.5	105		317/027	OBSERVED MAX WIND	
31.5	76.0	CENTER	002			
31.4	75.8	11	002	250/010	19	15
31.4	75.4	31	000	300/007	20	16
31.4	75.1	46	999	270/010	20	17
31.4	74.8	61	000	210/022	20	17
<del>31.4</del>	<del>74.6</del>	<del>71</del>	<del>999</del>	<del>150/013</del>	<del>19</del>	<del>17</del>
31.4	74.3	87	000	190/012	19	15
31.4	74.0	102	000	180/015	19	15
31.4	74.8	01		125/022	OBSERVED MAX WIND	

NOV 23 1965  
 AF 80 3919A KEITH DU 38 KMIA  
 SUPPLEMENTARY VORTEX

OBSERVATION PERIOD : 0514Z - 0750Z  
 ALTITUDE : 01500 FT

ENTRANCE OR EXIT ANGLE OF AIRCRAFT W. STIME TO STOP IN 100 DEGREES

LAT	LONG	ASST (NM)	PRSC (50)	WIND (KTS)	TEMP (C)	DEPT (C)
25.5	82.7	90	004	250/050	22	23
25.8	82.7	84	006	270/050	22	23
25.1	82.7	00	001	200/050	22	23
25.3	82.0	54	000	250/050	23	22
25.5	82.7	56	004	250/020	24	22
25.3	82.8	20	004	250/014		
25.0	82.7	72		274/070	OBSERVED MAX WIND	
27.2	82.0	CENTER	006			
25.7	82.7	30	004	240/020	23	23
25.3	82.0	42	000	010/000	24	22
25.4	82.4	69	000	250/040	22	22
25.2	82.2	03	000	240/050	21	21
25.1	82.1	71	001	240/050	21	21
25.9	82.0	54	000	230/050		23
25.7	81.9	97	004	240/050	22	19
25.6	81.0	105	005	230/040	22	21
25.4	81.7	110	005	230/050	22	22
25.2	81.0	131	000	40/050		22
25.0	81.5	104	000	240/020		19
25.9	82.0	00		240/050	OBSERVED MAX WIND	

TABLE 8. TROPICAL CYCLONE RECONNAISSANCE SUMMARY FOR 1988.

	Atlantic	Eastern Pacific	Central Pacific
<b>1. Requirements Levied</b>			
TDs, TStorms, Hurricanes	198	0	36
Invests	43	0	0
Total Levied	241	0	36
Requirements Cancelled	79	0	9
<b>TOTAL REQUIREMENTS</b>	<b>0</b>	<b>0</b>	<b>27</b>
<b>2. Requirements Accomplished (Fixes/Invests)</b>			
53rd WRS	94/8	0	18/0
815th TAS	30/3	0	9/0
NOAA/OAO	23/2	0	0/0
<b>TOTAL ACCOMPLISHMENTS</b>	<b>147/13</b>	<b>0</b>	<b>27/0</b>
Missed Fixes: AF980 0519A Keith 21 Nov, AF861 0719A Keith 22 Nov. Late Fixes: AF360 1117A Joan 18 Oct, AF366 1019A Keith 23 Nov.			
<b>3. Missions Flown</b>			
53rd WRS	55/9	0	10/0
815th TAS	21/4	0	6/0
NOAA/OAO	11/2	0	0/0
<b>TOTAL FLOWN</b>	<b>87/15</b>	<b>0</b>	<b>16/0</b>
53WRS Deployment time: 258.8 hrs. 815TAS Deployment time: 147.3 hrs. OAO Deployment time: 2.5 hrs.			
<b>4. Flying Time</b>			
53rd WRS	631.4 hrs	0	102.0
815th TAS	215.9 hrs	0	61.1
NOAA/OAO	107.0 hrs	0	0
<b>TOTAL TIME</b>	<b>954.3 hrs</b>	<b>0</b>	<b>163.1</b>
<b>GRAND TOTAL 1988 RECON FLIGHT TIME 1526.0 hrs</b>			
<b>5. Observations:</b>			
	Horizontal 1613	Vertical 136	

TABLE 9. Probability Forecasts for 1988 Landfalling U.S. Tropical Cyclones.

Chances of the center of Tropical Storm Alberto passing within 65 miles of listed locations by date and time (EDT) indicated; probabilities in percent.

ADVISORY DATE/TIME	07/10AM	07/NOON
<u>PROBABILITY TIME</u>	<u>10/2AM</u>	<u>10/8AM</u>
BAR HARBOR ME	7	21
EASTPORT ME	15	39
ST JOHNS NB	21	45
MONCTON NB	19	37
YARMOUTH NS	61	75
HALIFAX NS	55	58
SABLE ISLAND NS	24	14
SYDNEY NS	39	40
EDDY POINT NS	45	45
PTX BASQUES NLFD	29	34
BURGEO NFLD	30	32
ILE ST PIERRE	27	25
CAPE RACE NLFD	16	14
HIBERNIA OILFIELD	8	8

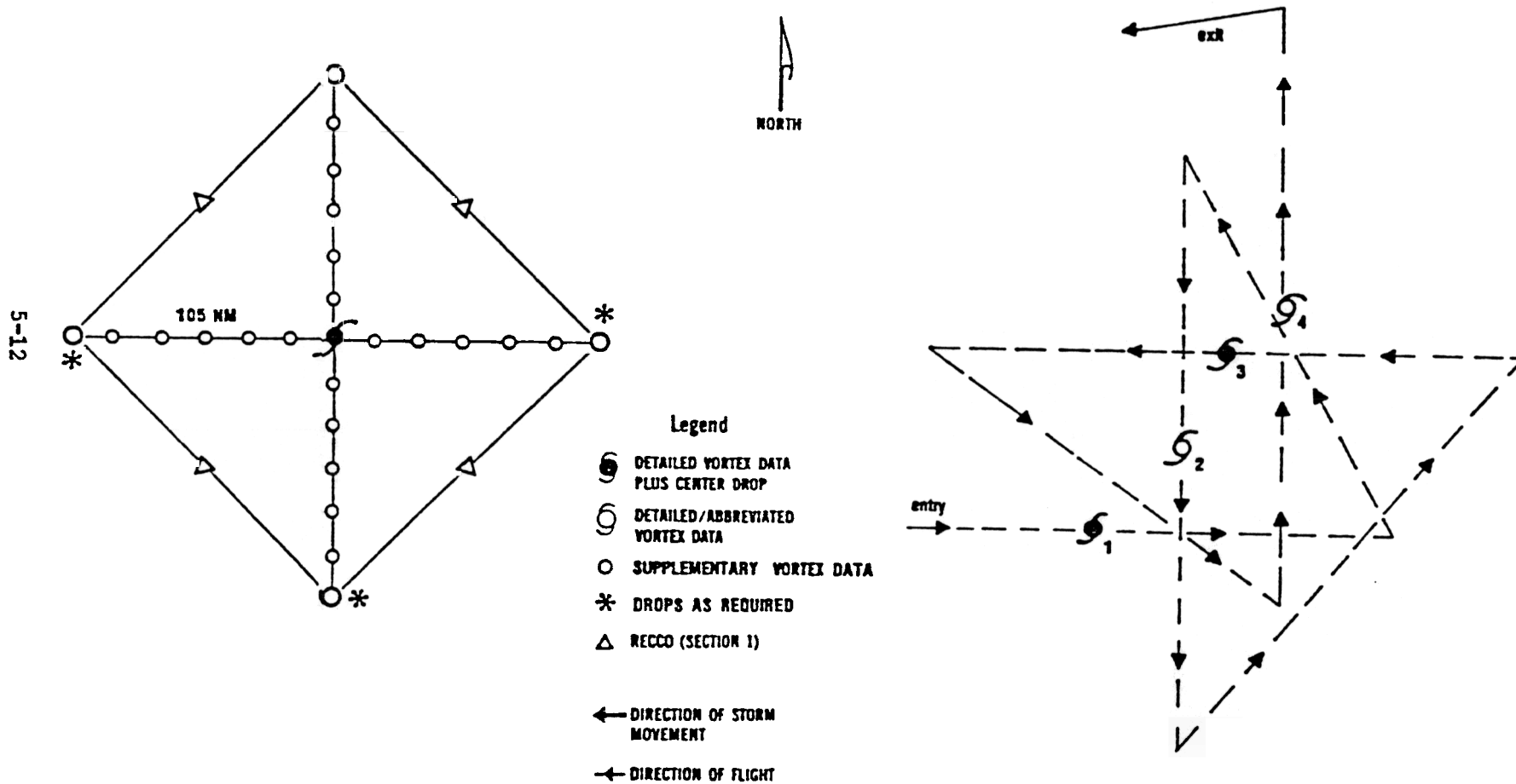


Table 9. Chance of the center of Beryl passing within 65 miles of the listed location by date and time (CDT) indicated. Probabilities in percent. X means probabilities of less than 2 percent.

<u>Advisory Date/Time</u> <u>Probability Thru</u>	<u>08/11AM</u> <u>11/7AM</u>	<u>08/5PM</u> <u>11/1PM</u>	<u>08/11PM</u> <u>11/7PM</u>	<u>09/5AM</u> <u>12/1AM</u>
Marathon, FL.	02	02	X	X
Key West, FL.	02	02	X	X
Marco Island, FL.	03	05	02	X
Ft. Myers, FL.	04	07	02	X
Venice, FL.	05	10	03	X
Tampa, FL.	06	14	04	X
Cedar Key, FL.	07	18	06	X
St. Marks, FL.	10	16	09	X
Apalachicola, FL.	12	20	11	X
Panama City, FL.	13	20	13	X
Pensacola, FL.	17	25	19	13
Mobile, AL.	20	34	29	18
Gulfport, MS.	46	57	58	59
Buras, MS.	97	88	81	96
New Orleans, MS.	85	35	44	93
New Iberia, LA.	17	12	18	38
Port Arthur, TX.	12	05	13	18
Galveston, TX.	11	03	12	15
Freeport, TX.	10	03	11	14
Port O Connor, TX.	09	02	10	12
Corpus Christi, TX.	08	X	08	09
Brownsville, TX.	07	X	08	08
GULF 29N 85W	12	22	10	06
GULF 29N 87W	21	30	20	11
GULF 28N 89W	44	29	26	17
GULF 28N 91W	23	14	21	22
GULF 28N 93W	15	04	15	18
GULF 28N 95W	11	02	12	14
GULF 27N 96W	10	X	10	11
GULF 25N 96W	08	X	08	08



# RECOMMENDED PATTERN "A" EXECUTION



## APPENDIX B.

Flight pattern "A" flown in obtaining Supplementary Vortex Data Messages.

Table 9. 72-hour probability, in per cent, of center of Tropical  
(contd) Depression Seven passing within 65 miles of listed locations

ADVISORY ISSUANCE TIME:	23/1030PM	24/6AM	24/NOON	24/6PM	24/1030PM
PROBABILITY END TIME:	<u>26/8PM</u>	<u>27/2AM</u>	<u>27/8AM</u>	<u>27/2PM</u>	<u>27/8PM</u>
SKPG 125N 717W	2	3	X	X	X
TAPA 171N 618W	4	X	X	X	X
TKPK 173N 627W	66	X	X	X	X
TNCM 181N 631W	17	X	X	X	X
TISX 177N 648W	69	4	X	X	X
TIST 183N 650W	47	X	X	X	X
TJPS 180N 666W	53	25	52	12	20
MDSO 185N 697W	29	27	42	45	73
MDCB 176N 714W	24	34	58	43	58
MTPP 186N 724W	21	22	36	30	48
MTCA 183N 738W	18	21	37	24	37
MKJP 179N 768W	13	16	23	17	19
MKJS 185N 779W	12	14	18	15	17
MWCG 193N 814W	9	10	11	10	12
MUGM 200N 751W	14	14	17	16	22
MUCM 214N 779W	11	10	11	11	13
MUCF 221N 805W	8	8	8	8	10
MUSN 216N 826W	6	7	7	7	8
MUHA 230N 824W	5	5	6	6	7
MUAN 219N 850W	4	5	5	5	6
MMCZ 205N 869W	3	4	5	4	5
MZBZ 175N 883W	2	4	5	4	4
MGPB 157N 886W	2	4	4	4	3
MHNJ 165N 859W	4	6	7	6	6
MNPC 141N 834W	4	7	7	6	5
MNBL 120N 839W	2	4	4	4	3
SKSP 126N 817W	3	5	6	5	4
MRLM 100N 831W	X	2	2	2	X
TJSJ 184N 661W	45	6	12	X	X
MDPP 198N 707W	19	13	10	18	26
MBJT 215N 712W	12	7	6	9	8
MYMM 224N 730W	11	7	7	8	9
MYSM 241N 745W	8	5	5	6	7
MYEG 235N 758W	9	7	7	7	9
MYAK 241N 776W	7	6	4	6	8
MYNN 251N 775W	6	4	2	5	6
MYGF 266N 787W	3	2	2	3	4
MMMD 210N 897W	X	2	2	2	2
ST CROIX VI	69	4	X	X	X
ST THOMAS VI	47	X	X	X	X
SAN JUAN PR	45	6	12	X	X
PONCE PR	53	25	52	12	20
MARATHON FL	4	4	4	4	6
MIAMI FL	3	3	3	3	5
W PALM BEACH FL	3	2	2	2	3
FT PIERCE FL	2	X	X	2	3
COCOA BEACH FL	X	X	X	X	2
KEY WEST FL	4	4	4	X	6
MARCO ISLAND FL	3	2	3	3	4
FT MYERS FL	2	2	2	2	3
VENICE FL	X	X	X	X	2
TAMPA FL	X	X	X	X	2

Table 9. 72-hour probability, in per cent, of center of Tropical  
(contd) Depression Seven passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	25/6AM	25/NOON	15/6PM	25/1030PM	26/6AM
PROBABILITY END TIME:	28/2AM	28/8AM	28/2PM	28/8PM	29/2AM
MDSO 185N 697W	98	23	X	X	X
MDCB 176N 714W	48	27	X	X	X
MPPP 186N 724W	54	65	42	22	x
MICA 183N 738W	31	35	9	15	X
MKJP 179N 768W	13	13	5	6	2
MKJS 185N 779W	13	14	8	12	4
MWCG 193N 814W	10	10	9	12	8
MUGM 200N 751W	29	38	39	72	X
MUCM 214N 779W	16	19	22	39	37
MUCF 221N 805W	12	14	15	21	19
MUSN 216N 826W	10	11	12	15	13
MUHA 230N 824W	9	11	13	16	15
MUAN 219N 850W	7	8	9	11	10
MMCZ 205N 869W	5	5	6	8	6
MZBZ 175N 883W	3	3	2	3	2
MGPB 157N 886W	2	2	X	X	X
MHNJ 165N 859W	3	3	2	3	2
MNPC 141N 834W	2	X	X	X	X
MDPP 198N 707W	53	70	9	X	X
MBJT 215N 712W	14	10	5	X	X
MYMM 224N 730W	15	15	22	4	4
MYSM 241N 745W	13	13	15	8	10
MYEG 235N 758W	15	16	22	14	23
MYAK 241N 776W	13	14	19	16	24
MYNN 251N 775W	11	12	16	13	16
MYGF 266N 787W	8	9	12	11	13
MMFR 185N 926W	X	X	X	2	X
MMMD 210N 897W	2	3	4	5	4
MARATHON FL	9	11	14	15	16
MIAMI FL	8	10	13	13	15
W PALM BEACH FL	7	9	12	11	13
FT PIERCE FL	6	7	10	10	12
COCOA BEACH FL	5	6	9	9	10
DAYTONA BEACH FL	3	4	7	7	9
JACKSONVILLE FL	2	3	5	5	6
SAVANNAH GA	X	3	3	3	4
CHARLESTON SC	X	X	3	2	3
MYRTLE BEACH SC	X	X	2	2	3
WILMINGTON NC	X	X	2	X	2
MOREHEAD CITY NC	X	X	X	X	2
KEY WEST FL	9	10	13	15	15
MARCO ISLAND FL	7	9	12	12	13
FT MYERS FL	6	8	11	11	12
VENICE FL	5	6	10	10	11
TAMPA FL	4	5	8	9	10
CEDAR KEY FL	3	4	7	7	8
ST MARKS FL	X	2	4	4	6
APALACHICOLA FL	X	2	5	5	6
PANAMA CITY FL	X	2	4	4	5
PENSACOLA FL	X	X	3	3	3
MOBILE AL	X	X	2	2	3
GULFPORT MS	X	X	2	2	2
BURAS LA	X	X	X	2	3
NEW ORLEANS LA	X	X	X	2	2



Table 9. 72-hour probability, in per cent, of center of Tropical  
(contd) Depression Seven passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME: PROBABILITY END TIME:	26/NOON 29/8AM	26/6PM 29/2PM	26/1030PM 29/8PM	27/6AM 30/2AM	27/NOON 30/8AM
MWCG 193N 814W	5	3	X	X	X
MUGM 200N 751W	5	X	X	X	X
MUCM 214N 779W	39	23	X	X	X
MUCF 221N 805W	21	15	4	X	X
MUSN 216N 826W	13	10	2	X	X
MUHA 230N 824W	17	14	6	X	X
MUAN 219N 850W	10	8	2	X	X
MMCZ 205N 869W	6	4	X	X	X
MZBZ 175N 883W	2	X	X	X	X
MYSM 241N 745W	6	7	2	X	X
MYEG 235N 758W	27	48	90	X	X
MYAK 241N 776W	31	44	86	98	27
MYNN 251N 775W	19	27	59	61	79
MYGF 266N 787W	15	18	34	36	62
MMMD 210N 897W	4	3	X	X	X
MARATHON FL	21	21	19	20	10
MIAMI FL	19	21	34	35	44
W PALM BEACH FL	16	18	30	33	52
FT PIERCE FL	14	16	25	26	43
COCOA BEACH FL	13	14	21	21	36
DAYTONA BEACH FL	11	12	17	18	26
JACKSONVILLE FL	9	10	14	15	18
SAVANNAH GA	6	7	12	13	15
CHARLESTON SC	5	6	11	12	15
MYRTLE BEACH SC	4	5	10	11	14
WILMINGTON NC	3	4	9	10	13
MOREHEAD CITY NC	3	3	8	10	12
CAPE HATTERAS NC	2	3	7	9	11
NORFOLK VA	X	X	5	7	9
OCEAN CITY MD	X	X	3	6	7
ATLANTIC CITY NJ	X	X	2	5	6
NEW YORK CITY NY	X	X	X	X	4
MONTAUK POINT NY	X	X	X	X	4
PROVIDENCE RI	X	X	X	X	3
NANTUCKET MA	X	X	X	X	3
HYANNIS MA	X	X	X	X	3
BOSTON MA	X	X	X	X	3
KEY WEST FL	19	18	14	14	6
MARCO ISLAND FL	18	18	20	21	19
FT MYERS FL	16	17	20	21	22
VENICE FL	14	15	17	18	18
TAMPA FL	13	13	17	17	20
CEDAR KEY FL	11	11	14	15	17
ST MARKS FL	8	9	11	12	12
APALACHICOLA FL	8	9	10	11	9
PANAMA CITY FL	7	8	9	9	8
PENSACOLA FL	5	6	7	6	5
MOBILE AL	4	5	5	5	3
GULFPORT MS	4	4	4	4	3
BURAS LA	4	4	4	3	2
NEW ORLEANS LA	3	3	3	3	9
NEW IBERIA LA	2	2	2	X	X

Table 9. 72-hour probability, in per cent, of center of Tropical  
(contd) Depression Seven passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	27/6PM	27/1030PM
PROBABILITY END TIME:	<u>30/2PM</u>	<u>30/8PM</u>
MYNN 251N 775W	23	X
MYGF 266N 787W	72	98
MARATHON FL	4	X
MIAMI FL	60	31
W PALM BEACH FL	72	81
FT PIERCE FL	60	72
COCOA BEACH FL	46	59
DAYTONA BEACH FL	33	41
JACKSONVILLE FL	21	25
SAVANNAH GA	17	21
CHARLESTON SC	17	20
MYRTLE BEACH SC	15	18
WILMINGTON NC	14	17
MOREHEAD CITY NC	14	15
CAPE HATTERAS NC	12	14
NORFOLK VA	10	12
OCEAN CITY MD	8	10
ATLANTIC CITY NJ	7	8
NEW YORK CITY NY	5	6
MONTAUK POINT NY	5	6
PROVIDENCE RI	4	5
NANTUCKET MA	4	5
HYANNIS MA	4	5
BOSTON MA	3	4
PORTLAND ME	2	3
BAR HARBOR ME	2	2
EASTPORT ME	X	2
YARMOUTH NS	X	2
KEY WEST FL	2	X
MARCO ISLAND FL	16	X
FT MYERS FL	21	5
VENICE FL	16	6
TAMPA FL	20	10
CEDAR KEY FL	17	12
ST MARKS FL	11	8
APALACHICOLA FL	8	6
PANAMA CITY FL	6	5
PENSACOLA FL	4	3
MOBILE AL	2	2
GULFPORT MS	2	2

Table 9. 72-hour probability, in per cent, of center of Tropical (contd) Storm Chris passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	28/6AM	28/NOON
PROBABILITY END TIME:	<u>01/2AM</u>	<u>01/8AM</u>
JACKSONVILLE FL	39	X
SAVANNAH GA	35	X
CHARLESTON SC	36	X
MYRTLE BEACH SC	29	X
WILMINGTON NC	24	X
MOREHEAD CITY NC	20	X
CAPE HATTERAS NC	18	X
NORFOLK VA	16	44
OCEAN CITY MD	14	47
ATLANTIC CITY NJ	12	3
NEW YORK CITY NY	11	X
MONTPAUK POINT NY	10	7
PROVIDENCE RI	9	27
NANTUCKET MA	10	51
HYANNIS MA	9	65
BOSTON MA	9	51
PORTLAND ME	7	23
BAR HARBOR ME	6	17
EASTPORT ME	6	15
ST JOHN NB	5	15
MONCTON NB	4	13
YARMOUTH NS	7	31
HALIFAX NS	5	29
SABLE ISLAND NS	4	18
SYDNEY NS	3	23
EDDY POINT NS	4	29
PTX BASQUES NFLD	2	13
BURGEO NFLD	2	15
ILE ST PIERRE	2	26
CAPE RACE NFLD	X	31
HIBERNIA OILFLD	X	27

X MEANS LESS THAN 2 PER CENT

TABLE 9. 72-Hour probability, in per cent, of center of Hurricane Florence passing within 65 miles of listed locations.  
(Time - Day/Hour (CDT))

ADVISORY ISSUANCE TIME:	07/05PM	07/930PM	08/05AM	08/11PM	08/05PM
PROBABILITY END TIME:	<u>10/1PM</u>	<u>10/7PM</u>	<u>11/1AM</u>	<u>11/7AM</u>	<u>11/1PM</u>
MUCF 221N 805W	X	X	2	X	X
MUSN 216N 826W	X	X	3	X	X
MUHA 230N 824W	X	4	5	X	X
MUAN 219N 850W	5	8	8	X	X
MMCZ 205N 869W	5	11	8	X	X
MZBZ 175N 883W	X	X	2	X	X
MYAK 241N 776W	X	X	2	X	X
MYNN 251N 775W	X	X	2	X	X
MGYF 266N 787W	X	3	3	X	X
MMSO 238N 982W	3	2	4	4	4
MTM 222N 979W	2	2	4	4	3
MTX 210N 974W	2	X	4	3	X
MMVR 192N 961W	X	X	4	X	X
MMFR 185N 926W	X	X	4	X	X
MMD 210N 897W	22	42	19	6	4
MARATHON FL	3	4	5	2	2
MIAMI FL	3	4	4	X	2
KEY WEST FL	3	5	5	3	2
MARCO ISLAND FL	5	7	6	4	4
FT MYERS FL	6	8	7	5	4
VENICE FL	7	10	8	6	6
TAMPA FL	8	10	8	7	7
CEDAR KEY FL	9	11	8	8	8
ST MARKS FL	11	12	8	9	9
APALACHICOLA FL	12	13	8	10	11
PANAMA CITY FL	12	13	8	11	11
PENSACOLA FL	12	12	8	11	12
MOBILE AL	12	12	7	11	12
GULFPORT MS	12	12	8	12	12
BURAS LA	13	12	9	13	14
NEW ORLEANS LA	12	11	8	12	13
NEW IBERIA LA	10	9	7	11	11
PORT ARTHUR TX	8	7	5	8	9
GALVESTON TX	7	6	5	8	9
FREEPORT TX	7	6	5	8	8
PORT O CONNOR TX	6	5	4	7	7
CORPUS CHRISTI TX	5	4	4	6	6
BROWNSVILLE TX	4	4	5	4	6

X MEANS LESS THAN 2 PER CENT

TABLE 9. 72-Hour probability, in per cent, of center of Hurricane  
(cont.) Florence passing within 65 miles of listed locations.  
(Time - Day/Hour (CDT))

ADVISORY ISSUANCE TIME:	08/0930PM	09/05AM	09/11AM	09/05PM
PROBABILITY END TIME:	<u>11/7PM</u>	<u>12/1AM</u>	<u>12/7AM</u>	<u>12/1PM</u>
MUCF 221N 805W	X	X	X	X
MUSN 216N 826W	X	X	X	X
MUHA 230N 824W	X	X	X	X
MUAN 219N 850W	X	X	X	X
MMCZ 205N 869W	X	X	X	X
MZBZ 175N 883W	X	X	X	X
MYAK 241N 776W	X	X	X	X
MYNN 251N 775W	X	X	X	X
MGYF 266N 787W	X	X	X	X
MMSO 238N 982W	3	4	X	X
MMTM 222N 979W	X	2	X	X
MMTX 210N 974W	X	X	X	X
MMVR 192N 961W	X	X	X	X
MMFR 185N 926W	X	X	X	X
MMMD 210N 897W	X	X	X	X
MARATHON FL	2	X	X	X
MIAMI FL	2	X	X	X
KEY WEST FL	2	X	X	X
MARCO ISLAND FL	4	X	X	X
FT MYERS FL	5	2	X	X
VENICE FL	6	2	X	X
TAMPA FL	7	3	X	X
CEDAR KEY FL	9	5	X	X
ST MARKS FL	11	8	X	X
APALACHICOLA FL	13	9	X	X
PANAMA CITY FL	13	11	2	X
PENSACOLA FL	14	15	18	16
MOBILE AL	14	17	33	45
GULFPORT MS	14	19	45	66
BURAS LA	16	24	59	80
NEW ORLEANS LA	14	20	45	58
NEW IBERIA LA	12	17	23	21
PORT ARTHUR TX	9	13	3	12
GALVESTON TX	9	12	X	9
FREEPORT TX	8	11	X	7
PORT O CONNOR TX	7	10	X	5
CORPUS CHRISTI TX	5	8	X	X
BROWNSVILLE TX	5	4	X	X

X MEANS LESS THAN 2 PER CENT



TABLE 9. Probability Forecasts for 1988 Landfalling U.S. Tropical Cyclones.

Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	09/NOON	09/6PM	09/10PM	10/6AM	10/NOON	10/6PM	10/10PM	11/6AM
PROBABILITY TIME	12/8AM	12/2PM	12/8PM	13/2AM	13/8AM	13/2PM	13/8PM	14/2AM
SKPG 12.5N 71.7W	9	11	7	9	8	3	--	--
TNCC 12.2N 69.0W	11	11	6	8	5	--	--	--
SVMG 11.0N 64.0W	9	--	--	--	--	--	--	--
TPPP 10.6W 61.4W	11	--	13	--	--	--	--	--
TPPT 11.2N 60.8W	4	--	--	--	--	--	--	--
TGPY 12.0N 61.8W	17	--	--	--	--	--	--	--
TBPB 13.1N 59.5W	64	--	--	--	--	--	--	--
TVSV 13.1N 61.2W	47	13	--	--	--	--	--	--
TLPL 13.8N 61.0W	68	73	--	--	--	--	--	--
TFFF 14.6N 61.0W	66	96	--	--	--	--	--	--
TDPR 15.3N 61.4W	44	94	--	--	--	--	--	--
TFFR 16.3N 61.5W	21	31	--	--	--	--	--	--
TAPA 17.1N 61.8W	12	9	--	--	--	--	--	--
TKPK 17.3N 62.7W	13	12	--	--	--	--	--	--
TNCM 18.1N 63.1W	11	8	--	--	--	--	--	--
TISX 17.7N 64.8W	14	16	28	15	10	--	--	--
TIIST 18.3N 65.0W	12	12	19	11	8	--	--	--
TJPS 18.0N 66.6W	13	16	22	19	19	11	--	--
TJSJ 18.4N 66.1W	12	14	19	14	12	3	--	--
MDSJ 18.5W 69.7W	10	13	16	16	18	25	28	33
MDCB 17.6N 71.4W	10	13	15	16	19	32	43	59
MTPP 18.6N 72.4W	8	11	13	13	15	22	28	37
MDPP 19.8N 70.7W	8	10	13	12	13	14	14	11
MTCA 18.3N 73.8W	7	10	11	12	14	20	25	33
MBJT 21.5N 71.2W	5	7	9	9	10	9	9	6
MYMM 22.4N 73.0W	3	6	7	7	8	9	9	8
MYSM 24.1N 74.5W	--	--	--	4	5	7	7	6
MYEG 23.5N 75.8W	--	--	--	4	6	8	9	8
MYAK 24.1N 77.6W	--	--	--	2	4	7	8	8
MKJP 17.9N 76.8W	3	8	8	9	11	15	17	20
MKJS 18.5N 77.9W	4	6	7	7	9	13	15	17
MUCM 20.0N 75.1W	4	7	9	9	11	14	17	19
SKSP 12.6N 81.7W	2	3	2	2	4	4	4	4
MUCM 21.4N 77.9W	--	4	5	5	7	11	12	13
MNPC 14.1N 83.4W	--	2	2	2	3	5	5	6
MNBL 12.0N 83.9W	--	2	--	2	2	3	2	3
MWCG 19.3N 81.4W	--	3	3	3	5	9	11	12
MHNJ 16.5N 85.9W	--	--	--	--	2	5	5	7
MZBZ 17.5N 88.3W	--	--	--	--	--	3	4	5
MGPB 15.7N 88.6W	--	--	--	--	--	3	3	4
MMCZ 20.5N 86.9W	--	--	--	--	--	4	4	6
MARATHON FL	--	--	--	--	2	--	5	6
MIAMI FL	--	--	--	--	--	--	4	5
W PALM BEACH FL	--	--	--	--	--	--	3	4
FT PIERCE FL	--	--	--	--	--	--	2	3
KEY WEST FL	--	--	--	--	2	--	5	6
MARCO ISLAND FL	--	--	--	--	--	--	--	4
FT MYERS FL	--	--	--	--	--	--	--	3
VENICE FL	--	--	--	--	--	--	--	3
TAMPA FL	--	--	--	--	--	--	--	2

TABLE 9 Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	11/NOON	11/6PM	12/MID	12/6AM	12/NOON	12/6PM	13/MID	13/6AM
PROBABILITY TIME	14/8AM	14/2PM	14/8PM	15/2AM	15/8AM	15/2PM	15/8PM	16/2AM
MDCB 17.6N 71.4W	62	65	79	—	—	—	—	—
MTPP 18.6N 72.4W	35	14	23	—	—	—	—	—
MDPP 19.8N 70.7W	4	—	—	—	—	—	—	—
MIKA 18.3N 73.8W	42	38	65	83	—	—	—	—
MBJT 21.5N 71.2W	3	—	—	—	—	—	—	—
MYMM 22.4N 73.0W	5	3	2	—	—	—	—	—
MYSM 24.1N 74.5W	5	4	4	—	—	—	—	—
MYEG 23.5N 75.8W	7	6	6	3	—	—	—	—
MYAK 24.1N 77.6W	8	8	7	5	—	—	—	—
MYNN 25.1N 77.5W	6	6	6	5	—	—	—	—
MYGF 26.6N 78.7W	4	6	5	5	—	—	—	—
MMVR 19.2N 96.1W	—	2	2	3	4	5	6	6
MMFR 18.5N 92.6W	4	4	4	5	4	7	8	7
MMMD 21.0N 89.7W	6	7	8	10	11	13	17	17
MKJP 17.9N 76.8W	26	33	45	66	—	—	6	—
MKJS 18.5N 77.9W	22	27	34	56	—	—	98	—
MUGM 20.0N 75.1W	19	15	16	11	—	—	—	—
SKSP 12.6N 81.7W	3	—	2	—	—	—	—	—
MUCM 21.4N 77.9W	14	14	14	13	8	—	—	—
MUCF 22.1N 80.5W	12	14	13	16	15	12	5	3
MUSN 21.6N 82.6W	12	—	14	19	22	25	24	21
MUHA 23.0N 82.4W	10	12	12	14	16	14	9	8
MUAN 21.9N 85.0W	9	12	12	15	19	21	25	26
MNFC 14.1N 83.4W	6	4	—	2	—	—	—	—
MNBL 12.0N 83.9W	2	—	—	—	—	—	—	—
MWCG 19.3N 81.4W	15	17	19	28	42	55	74	86
MHNJ 16.5N 85.9W	8	7	9	8	6	6	5	3
MZBZ 17.5N 88.3W	7	7	8	4	7	8	9	8
MGPB 15.7N 88.6W	6	5	5	4	—	—	3	—
MMCZ 20.5N 86.9W	9	10	11	13	16	18	25	27
MARATHON FL	7	9	9	10	11	7	4	3
MIAMI FL	6	7	7	7	9	5	3	—
W PALM BEACH FL	4	6	5	6	6	5	—	—
FT PIERCE FL	3	5	5	5	5	4	—	—
COCOA BEACH FL	—	4	—	5	5	4	—	—
DAYTONA BEACH FL	—	3	—	4	4	4	—	—
KEY WEST FL	8	10	9	11	11	9	5	4
MARCO ISLAND FL	5	8	7	8	8	7	4	4
FT MYERS FL	4	7	6	7	8	7	4	4
VENICE FL	—	6	5	7	8	7	5	4
TAMPA FL	—	5	3	6	6	6	4	4
CEDAR KEY FL	—	3	3	5	5	5	4	4
ST MARKS FL	—	—	2	4	5	4	3	4
APALACHICOLA FL	—	—	2	4	5	5	4	5
PANAMA CITY FL	—	—	2	4	5	5	4	5
PENSACOLA FL	—	—	—	3	4	4	4	5
MOBILE AL	—	—	—	—	4	4	4	5
GULFPORT MS	—	—	—	—	4	4	4	5
BURAS LA	—	—	—	3	5	5	5	7
NEW ORLEANS LA	—	—	—	—	4	4	4	6
NEW IBERIA LA	—	—	—	—	—	—	4	6
PORT ARTHUR TX	—	—	—	—	—	—	3	5
GALVESTON TX	—	—	—	—	—	—	4	6
FREEPORT TX	—	—	—	—	—	—	4	6
PORT O CONNOR TX	—	—	—	—	—	—	3	6
CORPUS CHRISTI TX	—	—	—	—	—	—	5	5
BROWNSVILLE	—	—	—	—	—	—	5	7

TABLE 9 Chances of the center of Hurricane Gilbert passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	13/NOON	13/6PM	14/MID	14/6AM	14/NOON	14/6PM	15/MID	15/6AM
PROBABILITY TIME	16/8AM	16/2PM	16/8PM	17/2AM	17/8AM	17/2PM	17/8PM	18/2AM
MMVR 19.2N 96.1W	5	4	4	5	5	3		
MMFR 18.5N 92.6W	7	5	4	4	3	—	—	
MMMD 21.0N 89.7W	22	21	33	46	53	—	—	
MUAN 21.9N 85.0W	39	32	23	—	—	—	—	—
MZBZ 17.5N 88.3W	4	4	—	—	—	—	—	—
MMCZ 20.5N 86.9W	54	45	69	—	—	—	—	—
MMSO 23.8N 98.2W	6	7	9	11	12	14	18	20
MMTM 22.2N 97.9W	6	6	7	9	11	11	14	14
MMTX 21.0N 97.4W	6	5	6	8	9	8	9	7
MARCO ISLAND FL	4	3	—	—	—	—	—	—
FT MYERS FL	4	3	—	—	—	—	—	—
VENICE FL	5	4	—	—	—	—	—	—
TAMPA FL	4	4	2	—	—	—	—	—
CEDAR KEY FL	4	4	2	—	—	—	—	—
ST MARKS FL	4	5	3	2	2	—	—	4
APALACHICOLA FL	5	6	4	3	2	—	—	5
PANAMA CITY FL	5	6	5	4	3	—	—	5
PENSACOLA FL	5	7	6	5	4	3	2	5
MOBILE AL	5	7	7	6	5	4	3	5
GULFPORT MS	6	8	8	7	6	5	3	5
BURAS LA	7	9	9	8	7	6	4	6
NEW ORLEANS LA	6	8	9	8	7	6	5	6
NEW IBERIA LA	6	8	9	9	9	8	7	6
PORT ARTHUR TX	5	7	9	10	10	10	10	7
GALVESTON TX	5	8	10	10	11	12	12	9
FREEPORT TX	5	7	10	11	11	12	13	11
PORT O CONNOR TX	5	7	10	11	11	13	15	14
CORPUS CHRISTI TX	5	7	9	11	11	14	16	17
BROWNSVILLE	6	8	10	12	13	16	21	23

TABLE 9 Chances of the center of Hurricane Gilbert passing within 65 miles of  
 (contd) listed locations by date and time (AST or EDT...both same) indicated;  
 probabilities in percent.

ADVISORY DATE/TIME	15/NOON	15/6PM	16/MID	16/6AM	16/NOON
PROBABILITY TIME	18/8AM	18/2PM	18/8PM	19/2AM	19/8AM
MMSO 23.8N 98.2W	43	24	31	39	40
MMTM 22.2N 97.9W	26	10	13	10	--
MMTX 21.0N 97.4W	15	2	3	--	--
APALACHICOLA FL	4	--	--	--	--
PANAMA CITY FL	4	--	--	--	--
PENSACOLA FL	4	--	--	--	--
MOBILE AL	4	2	2	4	--
GULFPORT MS	4	2	2	4	--
URAS LA	5	2	2	5	
NEW ORLEANS LA	5	3	3	4	
NEW IBERIA LA	6	6	6	5	--
PORT ARTHUR TX	7	10	9	8	5
GALVESTON TX	9	12	11	11	7
FREEPORT TX	11	14	13	13	9
PORT O CONNOR TX	14	17	16	19	15
CORPUS CHRISTI TX	18	20	19	26	23
BROWNSVILLE	27	32	35	46	54

Table 9. 72-hour probability, in per cent, of center of Tropical  
(contd) Depression Sixteen passing within 65 miles of listed locations.

ADVISORY ISSUANCE TIME:	29/NOON	29/6PM	29/1030PM	30/6AM	30/NOON
PROBABILITY END TIME:	<u>02/8AM</u>	<u>02/2PM</u>	<u>02/8PM</u>	<u>03/2AM</u>	<u>03/8AM</u>
SKPG 125N 717W	X	2	2	2	4
TNCC 122N 690W	3	4	4	5	6
SVMG 110N 640W	9	10	8	11	11
TTPP 106N 614W	12	14	11	15	15
TTPT 112N 608W	13	15	14	16	18
TGPY 120N 618W	11	14	12	15	17
TBPB 131N 595W	13	15	17	17	24
TVSV 131N 612W	11	13	14	15	18
TLPL 138N 610W	11	13	14	14	18
TFFF 146N 610W	10	12	13	13	17
TDPR 153N 614W	8	10	12	11	15
TFFR 163N 615W	7	9	11	10	13
TAPA 171N 618W	5	7	10	8	11
TKPK 173N 627W	5	7	9	7	11
TNCM 181N 631W	3	5	7	6	9
TISX 177N 648W	3	5	6	5	9
TIST 183N 650W	2	4	6	4	8
TJPS 180N 666W	2	3	4	3	7
MDSO 185N 697W	X	X	2	X	3
MDCB 176N 714W	X	X	X	X	3
MTPP 186N 724W	X	X	X	X	2
TJSJ 184N 661W	2	3	4	3	7
MDPP	X	X	X	X	2
ST CROIX VI	3	5	6	5	9
ST THOMAS VI	2	4	6	4	8
SAN JUAN PR	2	3	4	3	7
PONCE PR	2	3	4	3	7

X MEANS LESS THAN 2 PER CENT



Table 9. 72-hour probability, in per cent, of center of Tropical  
(contd) Storm Isaac passing within 65 miles of listed locations

ADVISORY ISSUANCE TIME:	30/6PM	01/0AM	01/6AM
PROBABILITY END TIME:	<u>03/2PM</u>	<u>03/8PM</u>	<u>04/2AM</u>
SKPG 125N 717W	5	5	6
TNCC 122N 690W	7	7	9
SVMG 110N 640W	9	8	10
TPPP 106N 614W	10	5	10
TPPT 112N 608W	17	12	27
TGPY 120N 618W	19	19	31
TBPB 131N 595W	50	71	68
TVSV 131N 612W	31	40	53
TLPL 138N 610W	33	46	46
TFFF 146N 610W	28	39	32
TDPR 153N 614W	23	30	23
TFFR 163N 615W	18	21	17
TAPA 171N 618W	16	17	14
TKPK 173N 627W	15	17	15
TNCM 181N 631W	13	14	13
TISX 177N 648W	13	15	14
TIST 183N 650W	12	14	13
TJPS 180N 666W	11	13	12
MDSO 185N 697W	7	9	9
MDCB 176N 714W	6	7	7
MTPP 186N 724W	4	5	5
MICA 183N 738W	3	4	4
MKJP 179N 768W	X	2	2
MUGM 200N 751W	X	2	2
TJSJ 184N 661W	11	13	12
MDPP 198N 707W	5	6	6
MBJT 215N 712W	X	4	4
MYMM 224N 730W	X	2	2
ST CROIX VI	13	15	14
ST THOMAS VI	12	14	13
SAN JUAN PR	11	13	12
PONCE PR	11	13	12

X MEANS LESS THAN 2 PER CENT

TABLE 9. Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY PROBABILITY	DATE/TIME	11/6PM	11/1030PM	12/6AM	12/NOON	12/6PM	12/1030PM	13/6AM	13/NOON
		14/2PM	14/8PM	15/2AM	15/8AM	15/2PM	15/8PM	16/2AM	16/8AM
SKPG	12.5N 71.7W	2	2	3	2	2	4	7	8
TNCC	12.2N 69.0W	4	3	5	4	5	7	10	10
SVMG	11.0N 64.0W	7	6	7	7	11	12	13	13
TTPP	10.6W 61.4W	9	7	8	8	14	13	12	13
TTPT	11.2N 60.8W	10	8	9	10	16	16	16	18
TGPY	12.0N 61.8W	11	9	10	11	16	17	20	21
TBPB	13.1N 59.5W	15	13	16	16	24	30	44	46
TVSV	13.1N 61.2W	12	11	13	14	18	20	29	29
TLPL	13.8N 61.0W	13	12	14	15	18	21	32	30
TFFF	14.6N 61.0W	13	12	14	15	16	19	27	25
TDPR	15.3N 61.4W	12	12	14	14	14	16	21	20
TFFR	16.3N 61.5W	11	11	13	14	12	14	16	16
TAPA	17.1N 61.8W	10	10	12	12	10	12	13	13
TKPK	17.3N 62.7W	8	9	11	11	9	11	13	12
TNCM	18.1N 63.1W	7	8	10	10	7	9	11	10
TISX	17.7N 64.8W	6	7	9	8	6	8	11	11
TIST	18.3N 65.0W	5	6	8	7	5	7	10	10
TJPS	18.0N 66.6W	4	4	7	6	4	6	9	10
TJSJ	18.4N 66.1W	4	5	7	6	4	6	9	9
MDSO	18.5W 69.7W	--	2	3	3	2	3	6	6
MDCB	17.6N 71.4W	--	--	2	2	--	2	5	6
MTPP	18.6N 72.4W	--	--	2	--	--	--	3	4
MDPP	19.8N 70.7W	--	--	2	--	--	--	4	4
MTCA	18.3N 73.8W	--	--	--	--	--	--	3	3
MBJT	21.5N 71.2W	--	--	--	--	--	--	2	2
MKJP	17.9N 76.8W	--	--	--	--	--	--	--	--
MKJS	18.5N 77.9W	--	--	--	--	--	--	--	--
MUGM	20.0N 75.1W	--	--	--	--	--	--	--	--
MPCO	9.3N 79.9W	--	--	--	--	--	--	--	--
SKSP	12.6N 81.7W	--	--	--	--	--	--	--	--
MUCM	21.4N 77.9W	--	--	--	--	--	--	--	--
MNPC	14.1N 83.4W	--	--	--	--	--	--	--	--
MNBL	12.0N 83.9W	--	--	--	--	--	--	--	--
MRLM	10.0N 83.1W	--	--	--	--	--	--	--	--
MWCG	19.3N 81.4W	--	--	--	--	--	--	--	--
MHNJ	16.5N 85.9W	--	--	--	--	--	--	--	--
MZBZ	17.5N 88.3W	--	--	--	--	--	--	--	--
MGPB	15.7N 88.6W	--	--	--	--	--	--	--	--
MMCZ	20.5N 86.9W	--	--	--	--	--	--	--	--

TABLE 9. Chances of the center of Hurricane Joan passing within 65 miles of  
 (contd) listed locations by date and time (AST or EDT...both same) indicated;  
 probabilities in percent.

ADVISORY DATE/TIME	13/6PM	13/9PM	13/MID	14/6AM	14/NOON	14/6PM	14/9PM	14/MID
PROBABILITY TIME	16/2PM	16/2PM	16/8PM	17/2AM	17/8AM	17/2PM	17/2PM	17/8PM
SKPG 12.5N 71.7W	9	9	10	10	11	12	12	12
TNCC 12.2N 69.0W	12	12	13	13	15	17	17	16
SVMG 11.0N 64.0W	13	13	16	16	28	39	39	29
TTPP 10.6W 61.4W	8	8	11	10	24	—	—	—
TTPT 11.2N 60.8W	16	16	23	24	49	—	—	—
TGPY 12.0N 61.8W	26	26	40	42	72	94	—	—
TBPB 13.1N 59.5W	71	71	91	97	78	—	—	—
TVSV 13.1N 61.2W	45	45	65	72	73	71	—	—
TLPL 13.8N 61.0W	48	48	57	58	41	—	—	—
TFFF 14.6N 61.0W	39	39	35	32	10	—	—	—
TDPR 15.3N 61.4W	27	27	19	18	8	6	—	—
TFFR 16.3N 61.5W	16	16	11	10	7	5	—	—
TAPA 17.1N 61.8W	12	12	9	9	6	5	—	—
TKPK 17.3N 62.7W	12	12	10	10	7	6	—	7
TNCM 18.1N 63.1W	10	10	8	9	7	6	—	6
TISX 17.7N 64.8W	12	12	11	11	9	9	—	8
TIST 18.3N 65.0W	10	10	9	10	8	8	—	8
TJPS 18.0N 66.6W	11	11	10	11	9	9	—	9
TJSJ 18.4N 66.1W	10	10	9	10	8	8	—	8
MDSD 18.5W 69.7W	8	8	8	9	8	8	—	7
MDCB 17.6N 71.4W	8	8	8	9	8	9	—	8
MTPP 18.6N 72.4W	6	6	6	7	6	7	—	6
MDPP 19.8N 70.7W	5	5	5	6	5	6	—	5
MICA 18.3N 73.8W	5	5	5	6	5	6	—	5
MBJT 21.5N 71.2W	3	3	3	4	3	3	—	3
MKJP 17.9N 76.8W	3	3	3	4	3	4	—	3
MKJS 18.5N 77.9W	—	—	2	2	2	2	—	2
MUGM 20.0N 75.1W	—	—	2	3	3	3	—	3
MPCO 9.3N 79.9W	—	—	2	2	2	—	—	2
SKSP 12.6N 81.7W	—	—	—	—	—	—	—	2
MUCM 21.4N 77.9W	—	—	—	—	—	—	—	—
MNPC 14.1N 83.4W	—	—	—	—	—	—	—	—
MNBL 12.0N 83.9W	—	—	—	—	—	—	—	—
MRIM 10.0N 83.1W	—	—	—	—	—	—	—	—
MWCG 19.3N 81.4W	—	—	—	—	—	—	—	—
MHNJ 16.5N 85.9W	—	—	—	—	—	—	—	—
MZBZ 17.5N 88.3W	—	—	—	—	—	—	—	—
MGPB 15.7N 88.6W	—	—	—	—	—	—	—	—
MMCZ 20.5N 86.9W	—	—	—	—	—	—	—	—



TABLE 9 Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	17/6AM	17/NOON	17/6PM	17/9PM	17/MID	18/6AM	18/NOON	18/6PM
PROBABILITY TIME	20/2AM	20/8AM	20/2PM	20/2PM	20/8PM	21/2AM	21/8AM	21/2PM
SKPG 12.5N 71.7W	96			--	--			
TNCC 12.2N 69.0W	--			--	--			
SVMG 11.0N 64.0W	--							
TTPP 10.6W 61.4W								
TTPT 11.2N 60.8W				--	--	--	--	
TGPY 12.0N 61.8W				--	--	--	--	
TBPB 13.1N 59.5W								
TVSV 13.1N 61.2W								
TLPL 13.8N 61.0W				--	--		--	
TFFF 14.6N 61.0W				--	--	--	--	
TDPR 15.3N 61.4W				--	--	--	--	
TFFR 16.3N 61.5W					--	--	--	
TAPA 17.1N 61.8W	--	--	--			--		--
TKPK 17.3N 62.7W	--	--	--			--		--
TNCM 18.1N 63.1W	--	--						
TISX 17.7N 64.8W	--	--						
TIST 18.3N 65.0W	--	--	--	--	--	--	--	
TJPS 18.0N 66.6W		--	--	--	--	--	--	
TJSJ 18.4N 66.1W	--	--	--	--	--	--	--	
MDSJ 18.5W 69.7W	--	--	--	--	--	--	--	
MDCB 17.6N 71.4W	--	--	--	--	--	--	--	
MTPP 18.6N 72.4W	3	3	--	--	--			
MDPP 19.8N 70.7W	--	--	--	--	--			
MICA 18.3N 73.8W	5	4	4	4	--		--	
MBJT 21.5N 71.2W	--	--		--	--	--	--	--
MKJP 17.9N 76.8W	8	7	7	7	6	5	3	3
MKJS 18.5N 77.9W	8	6	6	6	6	5	3	3
MUGM 20.0N 75.1W	4	3	3	3	3	2	--	--
MPCO 9.3N 79.9W	10	11	12	12	11	13	24	22
SKSP 12.6N 81.7W	14	14	16	16	18	22	18	18
MUCM 21.4N 77.9W	3	2	2	2	3	2	--	--
MNPC 14.1N 83.4W	11	11	12	12	14	15	12	12
MNBL 12.0N 83.9W	11	11	12	12	14	16	15	15
MRLM 10.0N 83.1W	9	10	11	11	12	14	17	17
MWCG 19.3N 81.4W	6	5	5	5	6	5	3	3
MHNJ 16.5N 85.9W	6	6	7	7	9	8	5	5
MZBZ 17.5N 88.3W	3	3	4	4	5	5	3	3
MGPB 15.7N 88.6W	4	4	5	5	7	7	4	4
MMCZ 20.5N 86.9W	2	--	2	2	3	2	--	--



TABLE 9. Chances of the center of Hurricane Joan passing within 65 miles of listed locations by date and time (AST or EDT...both same) indicated; probabilities in percent.

ADVISORY DATE/TIME	18/MID	19/6AM	19/NOON	19/6PM	19/MID	20/6AM	20/NOON	20/6PM
PROBABILITY TIME	21/8PM	22/2AM	22/8AM	22/2PM	22/8PM	23/2AM	23/8AM	23/2PM
SKPG 12.5N 71.7W	--	--	--	--				
TNCC 12.2N 69.0W	--	--	--	--				
SVMG 11.0N 64.0W	--	--	--	--	--	--	--	
TTPP 10.6W 61.4W	--	--	--	--	--	--	--	
TTPT 11.2N 60.8W	--	--	--	--				
TGPY 12.0N 61.8W	--	--	--	--	--	--		
TBPB 13.1N 59.5W	--	--	--	--	--			
TVSV 13.1N 61.2W	--	--	--	--	--			
TLPL 13.8N 61.0W		--	--			--	--	
TFFF 14.6N 61.0W		--				--	--	
TDPR 15.3N 61.4W						--	--	
TFFR 16.3N 61.5W								
TAPA 17.1N 61.8W								
TKPK 17.3N 62.7W								
TNCM 18.1N 63.1W								
TISX 17.7N 64.8W		--	--					--
TIST 18.3N 65.0W		--	--					--
TJPS 18.0N 66.6W								--
TJSJ 18.4N 66.1W	--	--	--	--	--	--	--	--
MDSJ 18.5W 69.7W	--	--	--	--	--	--	--	--
MDCB 17.6N 71.4W	--	--	--	--	--	--		--
MTPP 18.6N 72.4W	--	--	--	--	--	--		--
MDPP 19.8N 70.7W	--	--	--	--	--	--	--	--
MICA 18.3N 73.8W	--	--	--	--	--	--	--	--
MBJT 21.5N 71.2W			--	--				
MKJP 17.9N 76.8W	4	--	--	--	--	--		
MKJS 18.5N 77.9W	4	4	--	--	--	--		--
MUGM 20.0N 75.1W	--	--	--	--	--	--	--	--
MPCO 9.3N 79.9W		18	15	14	13	17	16	15
SKSP 12.6N 81.7W		23	27	33	35	27	28	31
MUCM 21.4N 77.9W			--	--	--	--	--	--
MNPC 14.1N 83.4W		14	16	16	16	14		15
MNBL 12.0N 83.9W		16	19	21	22	18		19
MRLM 10.0N 83.1W		17	17	19	20	18		19
MWCG 19.3N 81.4W		3	4	3	4	3		3
MHNJ 16.5N 85.9W		6	8	8	8	7		7
MZBZ 17.5N 88.3W		3	5	5	5	3		4
MGPB 15.7N 88.6W		5	7	8	7	5		6
MMCZ 20.5N 86.9W		--	2	2	2	--		

TABLE 9. Chances of the center of Hurricane Joan passing within 65 miles of  
 (contd) listed locations by date and time (AST or EDT...both same) indicated;  
 probabilities in percent.

ADVISORY DATE/TIME	20/MID	21/6AM	21/NOON	21/6PM	21/MID
PROBABILITY TIME	23/8PM	24/2AM	24/8AM	24/2PM	24/8PM
SKPG 12.5N 71.7W					
TNCC 12.2N 69.0W					
SVMG 11.0N 64.0W					
TTPP 10.6W 61.4W					
TTPT 11.2N 60.8W	--	--	--	--	--
TGPY 12.0N 61.8W	--	--	--	--	--
TBPB 13.1N 59.5W					
TVSV 13.1N 61.2W					
TLPL 13.8N 61.0W	--	--	--	--	--
TFFF 14.6N 61.0W	--	--	--	--	--
TDPR 15.3N 61.4W	--	--	--	--	--
TFFR 16.3N 61.5W	--				
TAPA 17.1N 61.8W	--				
TKPK 17.3N 62.7W	--	--	--	--	
TNCM 18.1N 63.1W	--	--	--	--	
TISX 17.7N 64.8W	--				
TIST 18.3N 65.0W	--				
TJPS 18.0N 66.6W					
TJSJ 18.4N 66.1W					
MDSO 18.5W 69.7W	--	--	--	--	
MDCB 17.6N 71.4W	--	--	--	--	
MTPP 18.6N 72.4W	--	--			
MDPP 19.8N 70.7W	--	--			
MTCA 18.3N 73.8W	--	--	--	--	--
MBJT 21.5N 71.2W	--	--	--	--	--
MKJP 17.9N 76.8W	--	--	--	--	--
MKJS 18.5N 77.9W	--				
MUGM 20.0N 75.1W	--				
MPCO 9.3N 79.9W	9	--	--	--	
SKSP 12.6N 81.7W	45	63	68	79	
MUCM 21.4N 77.9W	--	--	--	--	--
MNPC 14.1N 83.4W	18	21	20	21	18
MNBL 12.0N 83.9W	22	36	38	46	78
MRIM 10.0N 83.1W	18	19	20	18	12
MWCG 19.3N 81.4W	4	4	4	--	--
MHNJ 16.5N 85.9W	9	11	11	11	11
MZBZ 17.5N 88.3W	6	7	8	8	9
MGPB 15.7N 88.6W	8	11	11	11	13
MNCZ 20.5N 86.9W	2	3	3	3	--

Table 9. Chance of the center of Tropical Storm Keith passing within 65 miles of the listed location by date and time (EST) indicated. Probabilities in percent.

Advisory Date/Time....	18/5AM	19/11PM	20/5AM
Probability Through...	21/1AM	22/7PM	23/1AM
MDSB	185N 697W	3	
MDCB	176N 714W	5	
MTPP	186N 724W	9	
MTCA	183N 738W	10	
MKJP	179N 768W	34	
MKJS	185N 779W	23	
MWCG	193N 814W	12	
MUGM	200N 751W	16	
MUCM	214N 779W	13	
MUCF	221N 805W	10	
MUSN	216N 826W	8	
MUHA	230N 824W	7	
MUAN	219N 850W	5	
MMCZ	205N 869W	4	
MZBZ	175N 883W	4	
MGPB	157N 886W	3	
MHNJ	165N 859W	6	
MNPC	141N 834W	6	
MNBL	120N 839W	3	
SKSP	126N 817W	5	
MDPP	198N 707W	5	
MBJT	215N 712W	6	
MYMM	224N 730W	8	
MYSM	241N 745W	7	
MYEG	235N 758W	9	
MYAK	241N 776W	8	
MYNN	251N 775W	6	
MYGF	266N 787W	3	
MMMD	210N 897W	2	
MARATHON FL		5	
MIAMI FL		4	
W PALM BEACH FL		3	
FT PIERCE FL		2	
KEY WEST FL		5	
MARCO ISLAND FL		3	
FT MYERS FL		2	
VENICE FL		2	
MKJS	185N 779W	2	
MWCG	193N 814W	9	
MUCM	214N 779W	2	
MUCF	221N 805W	5	
MUSN	216N 826W	8	
MUHA	230N 824W	6	
MUAN	219N 850W	10	
MMCZ	205N 869W	13	
MZBZ	175N 883W	17	
MGPB	157N 886W	15	
MHNJ	165N 859W	30	
MNPC	141N 834W	19	
MNBL	120N 839W	2	
MYAK	241N 776W	2	
MYNN	251N 775W	2	
MYGF	266N 787W	2	
MMTM	222N 979W	2	
MMTX	210N 974W	2	
MMVR	192N 961W	4	
MMFR	185N 926W	9	
MMMD	210N 897W	10	
MARATHON FL		4	
MIAMI FL		3	
W PALM BEACH FL		2	
FT PIERCE FL		2	
KEY WEST FL		4	
MARCO ISLAND FL		3	
FT MYERS FL		3	
VENICE FL		2	
TAMPA FL		2	
MWCG	193N 814W	5	
MUCF	221N 805W	4	
MUSN	216N 826W	7	
MUHA	230N 824W	6	
MUAN	219N 850W	10	
MMCZ	205N 869W	14	
MZBZ	175N 883W	22	
MGPB	157N 886W	17	
MHNJ	165N 859W	48	
MNPC	141N 834W	4	
MMTM	222N 979W	2	
MMTX	210N 974W	4	
MMVR	192N 961W	6	
MMFR	185N 926W	11	
MMMD	210N 897W	12	
MARATHON FL		3	
MIAMI FL		2	
W PALM BEACH FL		2	
KEY WEST FL		4	
MARCO ISLAND FL		3	
FT MYERS FL		2	
VENICE FL		2	
TAMPA FL		2	
GULF 28N 89W		2	
NNNN			

Table 9. Probabilities continued...

Advisory Date/Time....	20/11AM	20/5PM	20/11PM
Probability Through...	23/7AM	23/1PM	23/7PM
MWCG 193N 814W	2	2	2
MUCM 214N 779W	3	6	3
MUCF 221N 805W	7	8	6
MUSN 216N 826W	13	15	8
MUHA 230N 824W	16	47	12
MUAN 219N 850W	48	70	24
MYSM 241N 745W	4	4	80
MYEG 235N 758W	4	4	2
MYAK 241N 776W	7	7	
MYNN 251N 775W	9	9	3
MYGF 266N 787W	13	14	3
MMMD 210N 897W	4	2	6
MARATHON FL	15	3	7
MIAMI FL	15	3	9
W PALM BEACH FL	15	16	14
FT PIERCE FL	15	16	7
COCOA BEACH FL	14	17	10
DAYTONA BEACH FL	13	17	13
JACKSONVILLE FL	10	15	12
SAVANNAH GA	7	11	12
CHARLESTON SC	7	8	12
MYRTLE BEACH SC	6	7	12
WILMINGTON NC	5	7	12
MOREHEAD CITY NC	5	6	12
CAPE HATTERAS NC	4	6	12
KEY WEST FL	17	5	12
MARCO ISLAND FL	18	3	11
FT MYERS FL	17	2	9
VENICE FL	15	18	7
TAMPA FL	12	20	5
CEDAR KEY FL	8	21	4
ST MARKS FL	8	21	4
APALACHICOLA FL	8	18	4
PANAMA CITY FL	7	14	3
PENSACOLA FL	4	8	3
MOBILE AL	2	8	13
GULFPORT MS	2	6	14
BURAS LA	2	3	14
GULF 29N 85W	10	2	13
GULF 29N 87W	6	2	14
GULF 28N 89W	4	2	14
MUCH 214N 779W		2	13
MUCF 221N 805W		6	12
MUSN 216N 826W		8	12
MUHA 230N 824W		15	12
MUAN 219N 850W		47	12
MMCZ 205N 869W		70	12
MYSM 241N 745W		4	12
MYEG 235N 758W		4	12
MYAK 241N 776W		7	11
MYNN 251N 775W		9	9
MYGF 266N 787W		14	7
MMMD 210N 897W		2	10
BERMUDA		3	13
MARATHON FL		16	12
MIAMI FL		16	12
W PALM BEACH FL		17	12
FT PIERCE FL		17	12
COCOA BEACH FL		17	12
DAYTONA BEACH FL		15	12
JACKSONVILLE FL		11	12
SAVANNAH GA		8	12
CHARLESTON SC		7	12
MYRTLE BEACH SC		7	12
WILMINGTON NC		6	12
MOREHEAD CITY NC		6	12
CAPE HATTERAS NC		5	12
NORFOLK VA		3	12
OCEAN CITY MD		2	12
KEY WEST FL		18	12
MARCO ISLAND FL		20	12
FT MYERS FL		21	12
VENICE FL		21	12
TAMPA FL		18	12
CEDAR KEY FL		14	12
ST MARKS FL		8	12
APALACHICOLA FL		8	12
PANAMA CITY FL		6	12
PENSACOLA FL		3	12
MOBILE AL		2	12
GULF 29N 85W		10	12
GULF 29N 87W		6	12
GULF 28N 89W		3	12
MWCG 193N 814W			2
MUCH 214N 779W			3
MUCF 221N 805W			6
MUSN 216N 826W			8
MUHA 230N 824W			12
MUAN 219N 850W			24
MMCZ 205N 869W			80
MZBZ 175N 883W			2
MYSM 241N 745W			3
MYEG 235N 758W			3
MYAK 241N 776W			6
MYNN 251N 775W			7
MYGF 266N 787W			10
MMMD 210N 897W			13
MARATHON FL			12
MIAMI FL			12
W PALM BEACH FL			12
FT PIERCE FL			12
COCOA BEACH FL			12
DAYTONA BEACH FL			11
JACKSONVILLE FL			9
SAVANNAH GA			7
CHARLESTON SC			5
MYRTLE BEACH SC			4
WILMINGTON NC			4
MOREHEAD CITY NC			3
CAPE HATTERAS NC			3
KEY WEST FL			13
MARCO ISLAND FL			14
FT MYERS FL			14
VENICE FL			14
TAMPA FL			13
CEDAR KEY FL			11
ST MARKS FL			9
APALACHICOLA FL			9
PANAMA CITY FL			8
PENSACOLA FL			5
MOBILE AL			4
GULFPORT MS			3
BURAS LA			4
NEW ORLEANS LA			3
GULF 29N 85W			11
GULF 29N 87W			8
GULF 28N 89W			7
GULF 28N 91W			4
GULF 28N 93W			2

Table 9. Probabilities continued....

Advisory Date/Time....	21/5AM		21/11AM		21/5PM
Probability Through...	24/1AM		24/7AM		24/1PM
24.5N 87.6W	30	MWCG 193N 814W	2	MWCG 193N 814W	2
26.5N 85.0W	15	MUCM 214N 779W	2	MUCM 214N 779W	3
MUCF 221N 805W	4	MUCF 221N 805W	6	MUCF 221N 805W	5
MUSN 216N 826W	6	MUSN 216N 826W	7	MUSN 216N 826W	6
MUHA 230N 824W	8	MUHA 230N 824W	11	MUHA 230N 824W	9
MUAN 219N 850W	18	MUAN 219N 850W	23	MUAN 219N 850W	8
MYAK 241N 776W	3	MMCZ 205N 869W	10	MMCZ 205N 869W	4
MYNN 251N 775W	4	MZBZ 175N 883W	2	MYSM 241N 745W	3
MYGF 266N 787W	6	MYSM 241N 745W	2	MYEG 235N 758W	4
MMVR 192N 961W	2	MYEG 235N 758W	3	MYAK 241N 776W	6
MMFR 185N 926W	3	MYAK 241N 776W	5	MYNN 251N 775W	7
MMMD 210N 897W	12	MYNN 251N 775W	6	MYGF 266N 787W	11
MARATHON FL	8	MYGF 266N 787W	9	MMMD 210N 897W	4
MIAMI FL	8	MMFR 185N 926W	2	MARATHON FL	11
W PALM BEACH FL	8	MMMD 210N 897W	7	MIAMI FL	12
FT PIERCE FL	8	MARATHON FL	11	KEY WEST FL	12
COCOA BEACH FL	9	MIAMI FL	11	MARCO ISLAND FL	14
DAYTONA BEACH FL	8	KEY WEST FL	13	FT MYERS FL	15
NNNN		MARCO ISLAND FL	14	VENICE FL	16
		FT MYERS FL	14	TAMPA FL	16
		VENICE FL	15	CEDAR KEY FL	15
		TAMPA FL	14	ST MARKS FL	12
		CEDAR KEY FL	12	APALACHICOLA FL	13
		ST MARKS FL	10	PANAMA CITY FL	12
		APALACHICOLA FL	11	PENSACOLA FL	8
		PANAMA CITY FL	9	MOBILE AL	5
		PENSACOLA FL	7	GULFPORT MS	5
		MOBILE AL	5	BURAS LA	7
		GULFPORT MS	5	NEW ORLEANS LA	4
		BURAS LA	6	NEW IBERIA LA	2
		NEW ORLEANS LA	4	GULF 29N 85W	16
		NEW IBERIA LA	3	GULF 29N 87W	14
		GULF 29N 85W	12	GULF 28N 89W	13
		GULF 29N 87W	11	GULF 28N 91W	6
		GULF 28N 89W	10	GULF 28N 93W	2
		GULF 28N 91W	6		
		GULF 28N 93W	3		
		GULF 25N 96W	2		



Table 9. Probabilities continued

Advisory Date/Time....	21/11PM	22/5AM	22/11AM
Probability Through...	24/7PM	25/1AM	25/7AM
MWCG 193N 814W	2	MUHA 230N 824W	6
MUCH 214N 779W	4	MYMM 224N 730W	2
MUCF 221N 805W	8	MYSM 241N 745W	6
MUSN 216N 826W	9	MYEG 235N 758W	5
MUHA 230N 824W	14	MYAK 241N 776W	7
HUAN 219N 850W	16	MYNN 251N 775W	10
MHCZ 205N 869W	4	MYGF 266N 787W	18
MYMM 224N 730W	2	BERMUDA	6
MYSM 241N 745W	6	MARATHON FL	14
MYEG 235N 758W	6	MIAMI FL	18
MYAK 241N 776W	9	W PALM BEACH FL	21
MYNN 251N 775W	11	FT PIERCE FL	23
MYGF 266N 787W	14	COCOA BEACH FL	24
MMHD 210N 897W	3	DAYTONA BEACH FL	21
MARATHON FL	16	JACKSONVILLE FL	15
MIAMI FL	16	SAVANNAH GA	8
W PALM BEACH FL	16	CHARLESTON SC	7
FT PIERCE FL	16	MYRTLE BEACH SC	6
COCOA BEACH FL	15	WILMINGTON NC	6
DAYTONA BEACH FL	13	MOREHEAD CITY NC	6
JACKSONVILLE FL	10	CAPE HATTERAS NC	6
KEY WEST FL	17	NORFOLK VA	3
MARCO ISLAND FL	19	OCEAN CITY MD	2
FT MYERS FL	18	KEY WEST FL	15
VENICE FL	18	MARCO ISLAND FL	25
TAMPA FL	16	FT MYERS FL	28
CEDAR KEY FL	12	VENICE FL	32
ST MARKS FL	8	TAMPA FL	28
APALACHICOLA FL	8	CEDAR KEY FL	21
PANAMA CITY FL	7	ST MARKS FL	10
PENSACOLA FL	4	APALACHICOLA FL	10
MOBILE AL	3	PANAMA CITY FL	7
GULF 29N 85W	10	PENSACOLA FL	2
GULF 29N 87W	7	GULF 29N 85W	15
GULF 28N 89W	4	GULF 29N 87W	5
		GULF 28N 89W	2
		MYMM 224N 730W	2
		MYSM 241N 745W	5
		MYEG 235N 758W	4
		MYAK 241N 776W	6
		MYNN 251N 775W	9
		MYGF 266N 787W	16
		BERMUDA	7
		MARATHON FL	12
		MIAMI FL	17
		W PALM BEACH FL	21
		FT PIERCE FL	24
		COCOA BEACH FL	26
		DAYTONA BEACH FL	23
		JACKSONVILLE FL	15
		SAVANNAH GA	9
		CHARLESTON SC	9
		MYRTLE BEACH SC	8
		WILMINGTON NC	7
		MOREHEAD CITY NC	7
		CAPE HATTERAS NC	7
		NORFOLK VA	4
		OCEAN CITY MD	2
		KEY WEST FL	12
		MARCO ISLAND FL	27
		FT MYERS FL	33
		VENICE FL	40
		TAMPA FL	35
		CEDAR KEY FL	23
		ST MARKS FL	10
		APALACHICOLA FL	10
		PANAMA CITY FL	6
		PENSACOLA FL	2
		GULF 29N 85W	16
		GULF 29N 87W	4

Table 9. Probabilities continued....

Advisory Date/Time....	22/5PM		22/11PM		23/5AM
Probability Through...	25/1PM		25/7PM		26/1AM
MUCH 214N 779W	2	MYGF 266N 787W	7	28.2N 79.9W	62
MUCF 221N 805W	2	BERMUDA	11	BERMUDA	12
MUHA 230N 824W	3	MIAMI FL	4	MIAMI FL	15
MBJT 215N 712W	2	W PALM BEACH FL	10	W PALM BEACH FL	49
MYMM 224N 730W	3	FT PIERCE FL	26	FT PIERCE FL	70
MY8M 241N 745W	7	COCOA BEACH FL	47	COCOA BEACH FL	69
MYEG 235N 758W	5	DAYTONA BEACH FL	57	DAYTONA BEACH FL	38
MYAK 241N 776W	7	JACKSONVILLE FL	39	JACKSONVILLE FL	5
MYNN 251N 775W	12	SAVANNAH GA	13	SAVANNAH GA	2
MYGF 266N 787W	25	CHARLESTON SC	11		
BERMUDA	10	MYRTLE BEACH SC	9		
MARATHON FL	14	WILMINGTON NC	8		
MIAMI FL	27	MOREHEAD CITY NC	9		
W PALM BEACH FL	35	CAPE HATTERAS NC	8		
FT PIERCE FL	39	NORFOLK VA	3		
COCOA BEACH FL	36	MARCO ISLAND FL	8		
DAYTONA BEACH FL	24	FT MYERS FL	30		
JACKSONVILLE FL	10	VENICE FL	75		
SAVANNAH GA	4	TAMPA FL	75		
CHARLESTON SC	4	CEDAR KEY FL	61		
MYRTLE BEACH SC	4	ST MARKS FL	10		
WILMINGTON NC	3	APALACHICOLA FL	5		
MOREHEAD CITY NC	4	PANAMA CITY FL	2		
CAPE HATTERAS NC	4	GULF 29N 85W	10		
NORFOLK VA	2				
KEY WEST FL	13				
MARCO ISLAND FL	48				
FT MYERS FL	56				
VENICE FL	60				
TAMPA FL	42				
CEDAR KEY FL	18				
ST MARKS FL	3				
APALACHICOLA FL	3				
PANAMA CITY FL	2				
GULF 29N 85W	4				

Advisory Date/Time....	24/11PM		24/5AM		24/11AM
Probability Through...	27/7PM		27/1AM		27/7AM
BERMUDA	28	BERMUDA	20	BERMUDA	36
				HIBERNIA OILFLD	7